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The 155 occupational briefs included in this publication describe many of the more widely distributed occupations in Ohio. The information contained in each brief has been submitted or verified by the national associations which establish and maintain standards for each occupation, by the professional societies to which persons employed in these occupations subscribe, through occupational information publications released by the Department of Labor, from the occupational releases of many states, and from the knowledge and working practice of many local employers, local employment service counselors, and the Dictionary of Occupational Titles. Contingent upon the availability of information, an occupational brief describes the nature of the work, employment opportunities, fields and areas of employment, remuneration, requirements for job entry, working conditions, promotion possibilities, placement services, and sources of additional information. Related documents are VT 006 276 and VT 006 277. (CH)

# OHIO EMPLOYMENT INFORMATION SERIES.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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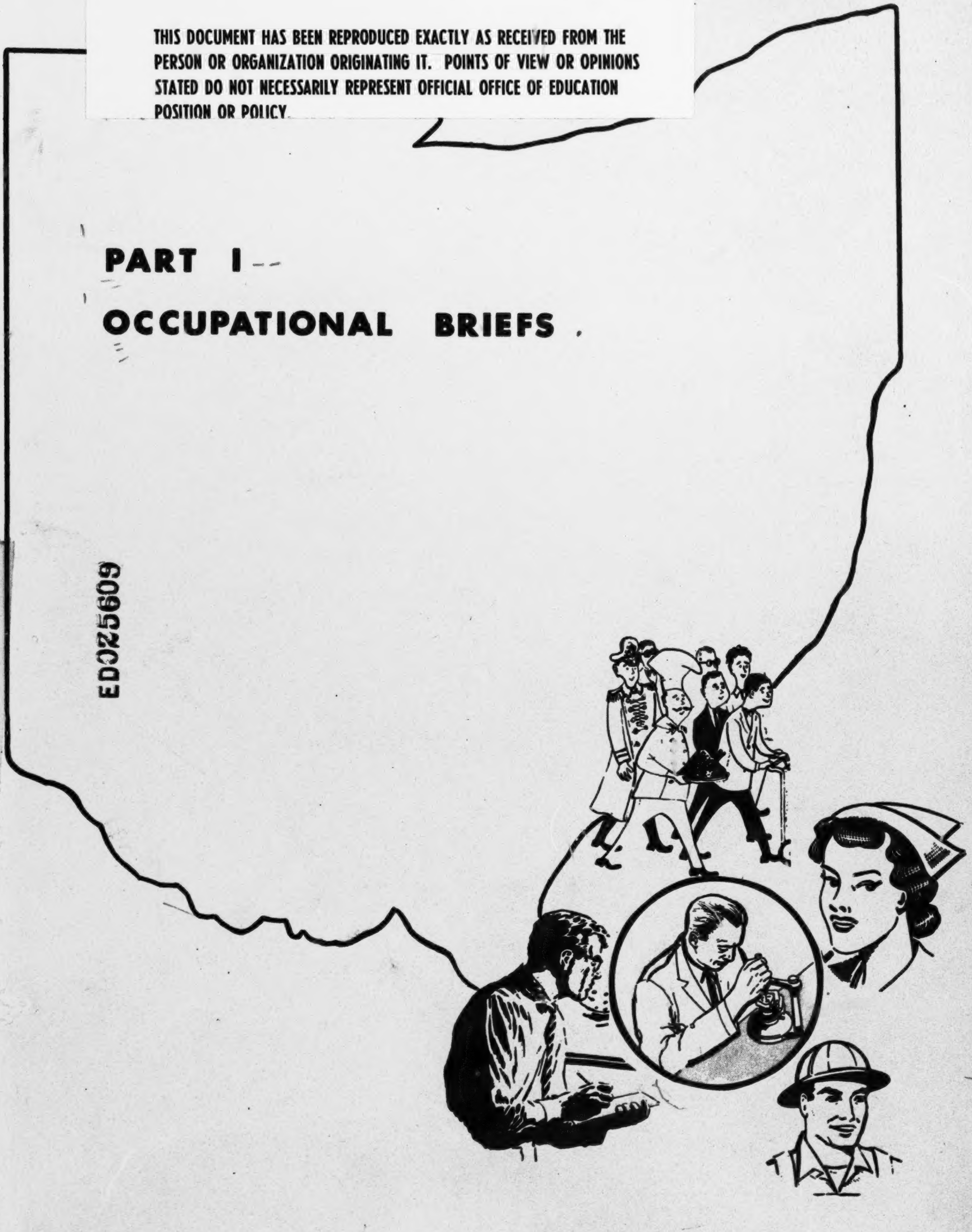
## PART I--

## OCCUPATIONAL BRIEFS.



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# FOREWORD

The occupational briefs included in this publication describe many of the more widely distributed occupations in Ohio. It is, be no means, a complete synthesis of the jobs available in this state. The information contained in each brief has been submitted and/or verified by the national associations which establish and maintain the standards for each occupation, by the professional societies to which persons employed in these occupations subscribe, through occupational information publications released by the Department of Labor, from the occupational releases of many states, and/or from the knowledge and working practice of many local employers, local Employment Service counselors, and the Dictionary of Occupational Titles.

The briefs enclosed are accurate and present pertinent information on each occupation to the extent that each represents an overview of that occupation. It is suggested that the reader contact the agencies listed under "Sources of Additional Information" for the details of any occupation. In addition, it is suggested that all counseling and guidance personnel localize the information contained in each brief by adding notes and community opportunities in the extra space provided.

This edition of Part I has been revised to include the occupational code numbers as they appear in the third edition of the Dictionary of Occupational Titles (United States Department of Labor, Manpower Administration and Bureau of Employment Security, 1965 edition), suffix codes included. Where briefs bear the second edition D.O.T. code, the reader is advised to refer to the index for current D.O.T. codes and suffixes.

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The Counseling Section of the State of Ohio, Bureau of Employment Services, wishes to express its appreciation to the agencies which have contributed time and information in compiling this material. As Ohio E.I.S. subscribers, we invite your appraisal of the Information contained and welcome your suggestions for addition to or revision of any of the occupational information included in this publication.

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# Employment Information Series

**Revised**
**April - 1966**

## ACCOUNTANT
**160.188 (0-01)**

NATURE OF THE WORK Generally speaking, an accountant designs and implements a system of: (1) recording business and financial transactions for individuals and organizations; and (2) analyzing, verifying, and reporting the results of these transactions.

There are three major fields of work in accountancy — public accounting, private accounting, and government accounting. A public accountant provides his services on a fee basis to the general public and various business enterprises; he may either be self-employed or a staff member of a public accounting firm. (If he has met certain educational and experience requirements and has passed an examination prescribed by law in every state, he is entitled to be known as a Certified Public Accountant.)

A private accountant is employed on a salaried basis by a private business or industrial firm. A government accountant serves on the staff of federal, state, or local governments. He works on the financial records of his agency or of private business organizations and individuals whose dealings are under government control.

Accountants in any of these three fields of work may specialize in such areas as auditing, budgeting and control, cost accounting, systems and procedures, and tax work.

An auditor examines the fiscal records and reports of an organization to appraise their accounting accuracy and to obtain a determination of assets and liabilities. He checks the legality of all financial transactions and their degree of compliance with established company policies and procedures. He may make appropriate recommendations for improvements to the management.

A budget and control accountant prepares and maintains a budgetary system which serves as an operational framework for an organization. More specifically, he assists management in analyzing current and future business dealings in terms of cost standards, expenditures, sales forcasts, and profit quotas.

A cost accountant controls a system for determining the costs which are incurred by a firm's operations. He classifies labor, material, and overhead expenditures to compute unit costs of products and services. He also analyzes cost records, such as payroll expenditure reports and machine-depreciation data, to ascertain the proper distribution of costs for various divisions of management and production. He prepares analytical and statistical reports of such costs to aid management in determining selling prices and profits.

A systems and procedures accountant sets up and supervises a system of record keeping. As an organization grows and laws change, he must review and either expand or modify the system and procedures. Many of these accountants are now specializing in the installation and use of electronic computers for record keeping.

A tax accountant prepares federal, state, or local tax returns for individuals, businesses, and industries. He examines statements and records and computes tax returns according to government regulations. He may research the effects of taxes on business operations and consequently recommend an alternate method of operation which reduces tax liabilities. He may also devise and install a system of keeping tax records.

In addition to the fields and specializations discussed above, an accountant may teach accounting theory and practices in colleges, universities, and business schools.

## OPPORTUNITIES

Current The second largest profession for men, this field has about doubled in size every decade for the past four decades. There is a current shortage of qualified accountants, especially tax and cost specialists.

The demand for college-trained individuals in presently -- and will be -- far greater than the demand for those with business-school training because of the increasing complexity of commerce and its accounting requirements.

Trends During the latter half of the 1960's it is estimated that as many as 10,000 accountants will be needed each year to replace those who die, retire, or change occupations. Assuming that business activity continues at its present rate, it is also estimated that approximately 10,000 more workers will be needed each year to fill newly created positions.

The increasing utilization of electronic data-processing machines to perform routine tasks will not affect opportunities for highly-trained individuals. Rather, accountants will be in great demand to program the correct information from the machines and interpret the answers.

Women There has been a rapid increase during recent years in the number of women entering this profession. They currently make up approximately 10 per cent of the profession. Women who obtain a college degree with a major in accounting and a CPA certificate will find the best opportunities.

FIELDS OF EMPLOYMENT Most accountants work in business and industrial firms, particularly in manufacturing. About a third, including most CPA's, are in public accounting firms. Federal and state governments employ approximately 10 per cent. In the federal government they are heavily concentrated in the Treasury Department, Defense Department, Securities and Exchange Commission, and General Accounting Office.

Accountants are also hired by various nonprofit organizations (such as charitable, scientific, and educational foundations) and educational institutions in the field of instruction, research, or administration.

AREAS OF EMPLOYMENT In 1960 there were an estimated 26,153 accountants and auditors employed in Ohio -- 22,014 male and 4,139 female. As of March, 1966, there were 2,906 male and 51 female CPA's and 2,281 male and 301 female PA's registered with the Accountancy Board of Ohio.

REMUNERATION College graduates earn average starting salaries of $5,700 to $7,200. Public accounting firms may pay slightly lower salaries. Senior accountants with five years of experience can expect $9,000 to $14,000 a year. Annual salaries of supervisors, managers, and partners in established public accounting firms range up to $15,000 and higher. Chief accountants in private business organizations average between $10,000 and $15,000 a year. Chief auditors employed by major industries can earn from $18,000 to $28,000.

Wages of accountants and auditors in government agencies depend on the grade of their position. The present federal entrance salary on GS-5 level ranges between $5,181 and $6,720; GS-7 ranges between $6,269 and $8,132. To secure employment as an accountant in the Ohio Civil Service System, an individual must have at least a degree from a college, university, or business school (with major course work in business administration or accounting) or five years' responsible experience in accounting work. The pay scale as of July, 1966, is as follows: accountant I, $460 a month; accountant II, $525; accountant III, $660. Better paying positions as tax commissioner agent and examiner are open to those who have excellent academic qualifications or experience.

Most accountants receive an annual paid vacation of two weeks. Depending upon the employer, other benefits may include sick leave with pay, full or partial payment of group health and life insurance, and pension plans. In many organizations, some type of profit-sharing or annual bonus is provided.

## REQUIREMENTS FOR ENTRY

Selection Factors above average intelligence and mathematical aptitude; ability to analyze, compare, and interpret data; keen interest in business and the various phases of its operations; energy and patience to concentrate on detail work for long hours; honesty; ability to express oneself well orally and in writing; supervisory qualities; ability to get along with all types of people.

High School Education The high school student should follow a college preparatory program which includes courses in mathematics, economics, science, and history. English, public speaking, and typing also prove useful.

A summer or part-time job in an office employing accountants provides an opportunity to measure one's interest in this profession. In such a job, a student may observe accountants at work and perhaps assist with some of their routine and clerical tasks.

College Education Universities, four- and two-year colleges, business schools, and correspondence schools offer accounting instruction. Since this profession is becoming increasingly more technical, however, a baccalaureate degree is highly desirable. Moreover, the American Institute of Certified Public Accountants recommends a master's degree, and there has been a trend among workers in recent years to do postgraduate study in accounting and business administration.

The undergraduate curricula in universities typically include courses in accounting, business law, economics, marketing, finance, taxation, psychology, mathematics, and English.

Aptitude Tests The American Institute of Certified Public Accountants offers aptitude test programs for high school and college students who are considering careers in accounting and business. Details may be obtained from the Institute.

Licensure, Registration All states require anyone practicing as a "certified public accountant" to be properly registered by the state board of accountancy. Registration with the Accountancy Board of Ohio requires a high school education and either a BS degree or two years' college or business college training plus four years accounting experience. (See EIS Part VI, p. 6)

SCHOLARSHIPS The American Institute of CPA's annually sponsors a National Merit Scholarship. To become eligible, a student must take the National Merit Scholarship Qualifying Test in his junior or next-to-last year of high school.

WORKING CONDITIONS The private accountant who remains in one office works from thirty-five to forty hours a week. Depending on the business, some overtime may be necessary at the end of the fiscal year when books are closed and reports are made. Although government accountants and Internal Revenue agents may be busy during the tax season, their hours are usually regular. Public accountants, who often work in their clients' offices, have the most irregular hours. They, too, may work under pressure during the tax season. Evening work is often common, and a great deal of travel may be required.

Work surroundings are generally pleasant, well-lighted, and well-ventilated. Offices which are located in busy factories or rooms equipped with business machines are less comfortable.

Eyestrain is the only possible hazard.

PROMOTION POSSIBILITIES Accountants in private industry are generally hired as management trainees and work for a time in each of several accounting specialties in a company. They may advance to chief plant accountant, chief cost accountant, senior internal auditor, or manager of internal auditing. Some become budget officers, sales analysts, or top-ranking executives, such as financial vice president or treasurer.

Junior public accountants are advanced to semisenior accountant in about two years and to senior accountant in another two or three years. Eventually they may become supervisors, managers, or even partners. Many establish their own firms.

Accountants in government agencies are usually hired as trainees and promoted to more responsible work after a probation period. Qualified men, usually CPA's, may receive eventual promotion to supervisor of a district office of the Internal Revenue Service.

Advancement opportunities are limited for those who have only a business school education.

PLACEMENT SERVICES Contact the local public employment service office, college placement office, and commercial placement agencies.

Many organizations send employment representatives to university campuses to interview qualified seniors. Government positions are usually filled through civil service examinations.

SOURCES OF ADDITIONAL INFORMATION American Institute of Certified Public Accountants, 666 Fifth Avenue, New York 19, New York; Financial Executives Institute, 50 West 44th Street, New York 36, New York; New York Life Insurance Company, 51 Madison Avenue, New York 10, New York; Federal Government Accountants Association, P.O. Box 53, Washington 4, D.C.; The National Association of Accountants, 505 Park Avenue, New York 22, New York; American Women's Society of Certified Public Accountants, 327 South LaSalle Street, Chicago, Illinois 60604.

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BUREAU OF EMPLOYMENT SERVICES
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EMPLOYMENT INFORMATION SERIES

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# ACCOUNTING CLERK
219.488

**NATURE OF THE WORK** An accounting clerk performs a variety of routine calculating, posting, and typing duties in his work. He posts details of business transactions, such as allotments, disbursements, deductions from payrolls, pay and expense vouchers, remittances paid and due, checks, and claims. He totals accounts, using an adding machine, and computes and records interest charges, refunds, cost of lost or damaged goods, freight or express charges, and rentals. He may type vouchers, invoices, account statements, payrolls, periodic reports, and other records.

**OPPORTUNITIES** Employment in this field is expected to rise primarily due to continuing business expansion, a result of population growth and economic prosperity. An intensified demand has been noted particularly in the larger metropolitan areas. Opportunities for advancement in this occupation are favorable especially for a person with experience or for one who has furthered his education. There are many openings for both men and women in this field. Men may be favored for supervisory positions in some establishments.

**EMPLOYMENT OUTLOOK** Large numbers of accounting clerks are employed in the following areas: Federal, state, county, and municipal governmental agencies; industrial, sales, and commercial establishments; public utilities; financial institutions; and insurance companies.

**REMUNERATION** The salary is influenced by the size and nature of the business establishment, responsibilities of the job, skills and knowledge required, and the size of the community. The beginning salary ranges from $70 to $100 per week. Increases in salary are made with experience and with the assignments performed. A worker in the occupation is usually covered by comprehensive insurance programs on a group-sharing basis. Most establishments allow, at least, a one-week vacation after one year's satisfactory employment.

## REQUIREMENTS FOR ENTRY

**Selection Factors** Most employers prefer applicants who have a high school education and/or who have graduated from a business school with training in commercial subjects. School courses should include mathematics, typing, penmanship, and general business subjects. Individuals should be well-groomed, poised, tactful, and courteous. A worker in this occupation is expected to be accurate, dependable, display initiative, and have the ability to get along well with others.

Training An increasing number of large companies offer some on-the-job training for beginning accounting clerks. In some localities, companies cooperate in work-study programs operated by high schools and business schools. Students enrolled in these programs gain practical experience in part-time jobs that may be helpful to them in obtaining full-time employment after graduation. Training has also been offered under the Manpower Development and Training Act. Contact your local Ohio State Employment Office for information on available MDTA training courses.

WORKING CONDITIONS Accounting clerks generally work a 40-hour week with time and a half for overtime. The work, generally in a large office, is inside where lighting and ventilation are good. The accounting clerk generally receives pay for five or more holidays a year and may enjoy other company benefits.

SOURCES OF ADDITIONAL INFORMATION Contact: The Ohio State Employment Service Office in your community; your high school counselor. Read: Clerical Occupations for Women, Today and Tomorrow. (Women's Bureau Bulletin #289, 1964), Superintendent of Documents, Washington, D.C., 20402. Price 35 cents.

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Ohio Bureau of Employment Services
145 South Front Street
Columbus, Ohio 43216

# EMPLOYMENT
# INFORMATION
# SERIES

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Ohio State Employment Service

## ACTUARY

020.188
~~0-36.55~~

Revised
October
1960

### OCCUPATIONAL RELEASE

**NATURE OF WORK** - Mathematician whose main job is to keep insurance plans financially sound. Gathers and analyzes masses of statistical data and explains their meaning clearly and simply.

Evaluates risks on what is being insured in order to set the premium rates for different kinds of insurance. Is concerned with losses from death, sickness, and injury, and with personal and property losses from fire, burglary, explosions, and other hazards. Considers the frequency of such losses and their costs. On the basis of continual research, may prepare records on mortality (death) and morbidity (sickness) and computes tables of premium rates and policy values.

Responsible for analysis of company earnings and often develops general insurance plans. Helps in preparing contract provisions. Continually studies new developments--business trends, legislative, social, and other factors which may affect the insurance business, and makes necessary revisions in tables.

Utilizing his broad knowledge of the insurance field, frequently works on problems in other departments, such as investment, underwriting, and group insurance and pension sales and service. (Actuaries dealing with group insurance or pension plans often specialize solely in these fields.) When in an executive position, may help decide general company policy and testify before public agencies on proposed legislation or on justification of company rates. May also prepare articles, press releases, and speeches.

In the Federal Government usually deals with a particular program such as social security, or insurance for veterans and members of the Armed Forces. In State governments is involved in the supervision and regulation of insurance companies, and may work on problems connected with unemployment insurance or workmen's compensation.

Consulting actuaries may be hired on a part-time basis to perform any actuarial services that may be required by private companies or government agencies.

**OPPORTUNITIES**

**Current** - Nationally, very favorable during the early 1960's. The shortage is now more critical than it ever has been. Although the field is small, it is far from crowded. In 1958, the U. S. Civil Service Commission authorized above minimum pay rates for actuaries in the Federal Government to help meet a critical need. The limited number of people with strong mathematics backgrounds are also in great demand in many other industries.

**Trends** - Expected to increase with the anticipated growth of the insurance industry. Replacement needs will also provide some openings. There is no end in sight to the strong demand for actuaries.

**For Women** - Good, for those who can qualify. Those withdrawing for marriage or other responsibilities may find it difficult to complete the years of continuous training and study required to gain professional status.

# ACTUARY

FIELDS OF EMPLOYMENT - Concentrated in the life insurance field. The remainder are in property and casualty insurance, consulting operations, or the Federal and State governments. A few work for property and casualty insurance rating bureaus.

AREAS OF EMPLOYMENT - Largest population centers.

REMUNERATION - Trainee salaries of $4500-$5000 were common in 1958. Having passed preliminary examinations given by professional actuarial societies, generally receive a higher starting salary. Experienced actuaries may receive $10,000 annually or more, and in exectuive positions, $25,000 and up

REQUIREMENTS OF ENTRY

Selection Factors

General - A well-rounded educational background, the ability to deal with people, and clear and simple expression. Preference is usually given to persons who have passed at least one of the actuarial examinations mentioned below, and to those with part-time actuarial experience, Mathematical ability, leadership qualities, and an interest in business problems are also important considerations.

Educational - College graduation with a major in mathematics, courses in higher mathematics--differential and integral calculus, analytical geometry, principles of mathematical statistics, probability, and finite differences. Actuarial mathematics and business law may be helpful. Various business studies in fields such as economics, investments, and accounting, and courses in English composition and speech may also prove valuable.

Examinations - Most actuaries gain professional status after passing examinations in life insurance given by The Society of Actuaries or those in property and casualty insurance given by The Casualty Actuarial Society. "Associate" rank is reached after completion of the first 4 examinations of the Society of Actuaries and after the first 4 of the Casualty Actuarial Society. The designation of "Fellow" is conferred after completion of all 7 examinations given by ither society. It usually takes more than 5 years to complete the entire series. For the more advanced examinations, experience in insurance work and intensive home study (one estimate, 15-20 hours per week) are usually required. College students may take some of the early examinations to determine their ability to become actuaries, and to increase their remployment opportunities.

Training - The beginning actuary is usually rotated among different jobs in the actuarial department. At first, may make calculations or tabulations for actuarial tables or for the annual statement. Later, may supervise actuarial clerks and be concerened with correspondence and reports.

AVENUES OF PROMOTION - Rank is determined in most insurance companies by the actuary's progress in the above-examinations up to the time he reaches "Fellow" status which usually amakes him a department head. A number of actuaries eventually qualify for high administrative positions in other areas of company activity, particularly in the underwriting. accounting, or investment departments. A few advance to top executive positions as company vice presidents or presidents.

ADDITIONAL INFORMATION - Local insurance companies, U. S. Civil Service, Society of Actuaries, 208 South LaSalle St., Chicago 4, Illinois, Casualty Actuarial Society, 200 East 42nd St., N. Y. 17, N. Y.

# EMPLOYMENT INFORMATION SERIES

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**Counseling Section**
**Ohio State Employment Service**

## ADVERTISING FIELD

February
1964

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## OCCUPATIONAL RELEASE

ADVERTISING - is informing the public either directly or indirectly about the products or services available on the market. There are four broad areas which make up the field of advertising: 1) media 2) advertisers 3) advertising agencies 4) suppliers and special services.

Media are the channels through which advertising messages are relayed to the public. The principal arteries of communication include newspapers, magazines, business publications, outdoor and transportation advertising, signs, and TV and radio broadcasts. Personnel in the Media field sell advertising space or broadcast time to advertisers, assist national advertisers in securing the cooperation of local merchants in selling their product, and help local retailers put up store displays or give permanent position to products being advertised in their medium.

An Advertiser is any firm which issues or sponsors advertising. The advertiser may have an advertising staff who develop store displays, folders, booklets, catalogues, trade exhibits, premiums, etc. The person in charge of advertising in a company coordinates the work of the advertising agency with that of the advertising staff and sales department. Department stores may have their own copy, art, and production staff to handle advertising.

An Advertising Agency is a firm which specializes in planning and creating effective advertising and marketing programs for other firms. Practically all national advertising, other than retail, seen in newspapers, magazines, professional and technical publications, outdoor displays, or received over radio and TV is placed through advertising agencies.

Suppliers and Special Services employ individuals to perform specific functions directly related to the planning and creation of an advertisement. Firms included in thiz area are: marketing research organizations; TV, radio and film producers; art studios; photographers, typographers, photoengravers, etc.; creative printers; direct mail companies; producers of display materials, premiums, and novelties; and product and package designers.

Advertising work offers a variety of job duties and demands people with many different interests and abilities. The occupational families found in this field are reviewed in the following paragraphs.

Personnel in Marketing Research collect data on a product(s) through interviews with its users. Obtain information on consumer usage; name appeal; advantages; disadvantages over competitive products; and price, packaging, and sales campaign appeal. This information is valuable in solving sales problems and creating a larger market for the product. Will make an analysis of the geographical regions in which the product may be sold, explore the reading and listening preferences as well as the living and buying habits of the people for whom the product is intended.

The Creative Department studies all available data on a sales problem and develops an advertisement to meet the situation. Copywriters create the headline and text of an advertisement and indicate what illustrations should go with it. The TV-Radio Department is responsible for selecting the television and radio programs and for producing the commercials. The entertainment portion of the programs is frequently produced by independent specialists, by networks or by stations; the agency function is to select, recommend and contract for the programs. But commercials are the sole creation of the agency. Television commercials originate in story-board form, involving work by art as well as copy people. After the idea is conceived, some agencies produce their own commercials and jingles; others engage outside suppliers, who work under the agency's supervision.

They utilize the technical description of the product and create an ad that will be understood by the reading or listening audience. The ad is made to appeal to the public's aspirations, interests, and needs; thus, persuading them to purchase the product.

The pictures in an ad are referred to as its Art or Art Work. The design as a whole is called its Layout. In the preparation of an advertisement the copywriter and artist or art director discuss the objective(s) and the number of ways in which the copy can be presented visually to meet the goal(s). The art work is then either ordered from an outside "free lance" artist or photographer, or furnished by a member of the art department.

The Media Department selects and recommends the form of communication best suited to meet the needs of the product to be advertised. They decide where and when it should be advertised to reach the greatest number of prospective buyers, and whether the advertisement should be large or small.

The Print Production Department plans and orders plates necessary to convert the final copy and art work into printed form. The person in charge must have an up-to-date knowledge of reproduction processes (typography, printing, photoengraving, electrotyping, etc.), paper, the mechanics of printing, and allied crafts. This section will guide the creative departments in planning their work so that the ad will be practical, tasteful, economical, and legible for printing.

The Traffic Department plans the flow and timing of the work so that each department completes its part in time to meet the publisher's closing date.

Account Management represents the client in the agency and the agency to the client. Presents any information regarding the client's product, views, or sales problems clearly and accurately to the agency. Recognizes and analyzes the client's sales and advertising program to meet the client's needs and wishes. Utilizes the talent, experience, and facilities within the agency to produce effective advertisement.

## OPPORTUNITIES

Current - There are some 15,000 to 18,000 openings each year in the field of advertising. Approximately 6,000 of these openings are in advertising agencies alone. Numerous opportunities exist in the publishing field, particularly in the area of newspapers. In addition, openings occur in the home offices of many major agencies, advertisers, and magazine publishers; most of which are located in New York City. Opportunities are good for young people who are well qualified by experience and aptitude.

Trends - It is anticipated that the volume of advertising will increase steadily in this decade as a result of the growth of industry, the development of new products and services, and increased competition among producers of industrial and consumer goods. The expansion of the self-service technique and the extended use of automatic vending machines will prompt many manufacturers to advertise their products on a national scale. Additional personnel will be needed to fill advertising jobs resulting from these changes. The sharpest increase in employment is likely to occur in advertising agencies, as more manufacturers and advertisers employ these agencies to handle their advertising work. The employment of advertising workers in firms outside the area of advertising agencies will probably be moderate. Openings will be particularly numerous in New York City but will also occur in many cities and towns throughout the country. There will be a need to replace those who die, retire, or leave the field for other reasons. Competition for all these positions will probably be keen.

For Women - Many find satisfying careers in advertising agency work, expecially on accounts such as food, fashion, cosmetics, textiles and home furnishings. Women are active in copy, media, research, fashion counseling, and in account executive areas. One of the best avenues of entrance to advertising work is through advertising departments in retail stores.

FIELDS OF EMPLOYMENT - Advertising agencies, retail stores, manufacturing firms, newspaper and magazine publishers, radio and TV stations, and outdoor and direct mail advertising firms or organizations employ advertising workers. Still others may work for printers, engravers, art studios, product and package designers, etc.

AREAS OF EMPLOYMENT - Most of the agencies handling national advertising are located in New York, Chicago, Detroit, Los Angeles, San Francisco, St. Louis, Cleveland, Minneapolis, Pittsburgh and Philadelphia. Sizable cities all over the U.S. have advertising agencies to serve local clients.

REMUNERATION - The geographical location, the company, and the progress within the company will influence salary schedules. The beginning wage for entry jobs is usually $60-$80 a week. Higher salaries are paid by larger firms for outstanding college graduates. In advertising agencies, junior copywriters will earn from $3,600 to $10,000 a year; the range for senior copywriters is usually $5,000 - $20,000 or more a year. Account Supervisors and Copy Chiefs receive even higher salaries. Individuals who create accounts and further business growth for their employers will earn from $10,000 to $50,000 a year. The wide range of salaries within specific classifications reflects the differences in experience, function, ability, talent, and degree of responsibility.

REQUIREMENTS FOR ENTRY

General - Possess an inquisitive mind, persistence, enthusiasm, resourcefulness, patience, initiative, good judgment, creative ability, and good working habits. The ability to grasp ideas quickly, work under tension or pressure when necessary, and to work with people. Capable of accepting criticism, communicating ideas clearly in written and oral form, and working out problems associated with this field. Have an unceasing interest in people, products, and services; and an understanding of the political, social and human relations problems of modern society. Work experience in copy-writing or other phases of advertising through school publications and summer jobs is valuable.

Education and Training - College preparatory courses with emphasis on written and oral English, history, and social studies. Courses in free-hand drawing, design and fine arts are helpful to those with creative ability. Most advertising agencies employing beginners today prefer college graduates. The recommended program of study should include a liberal arts program supplemented by courses in advertising. Principles of advertising, marketing, advertising media and markets, and market research are helpful in the field of advertising. Training programs for young people vary from agency to agency. Large agencies usually have formal training programs for outstanding college graduates. These programs cover all aspects of the advertising field. New entrants in smaller agencies often have the opportunity to do many different kinds of work.

WORKING CONDITIONS - Hours may be highly irregular. May have to work evenings and weekends to complete important assignments. Will frequently work under environmental pressure or tension.

AVENUES OF PROMOTION - Men may begin as mail clerks, messengers, assistants in research or production work or as space or time salesmen. A few may begin as junior copy-writers. The smaller the agency the better the opportunity for obtaining a writing job experience. Women usually begin as stenographers and secretaries or, if they have the required educational background, as research assistants. Organizations such as catalogue houses take beginners. A few agencies take trainees but these openings are relatively few and rather infrequent. Copywriters and account executives, possessing exceptional ability in making on-the-job contacts with advertisers, usually experience rapid promotion. Many workers prefer to remain in their own specialties and be promoted to more responsible work at increased pay. Others may establish their own agencies. Opportunity depends upon ability, talent, training, experience, initiative, and ability to sell oneself.

FOR ADDITIONAL INFORMATION - Write: Advertising Federation of America, 655 Madison Avenue, New York 21, New York; American Association of Advertising Agencies, 200 Park Avenue, New York 17, New York; Association of National Advertisers, 155 East 44 Street, New York 17, New York. Refer to your library or contact people who are professionally employed in this work. Contact your local Ohio State Employment Service office.

# EMPLOYMENT INFORMATION SERIES

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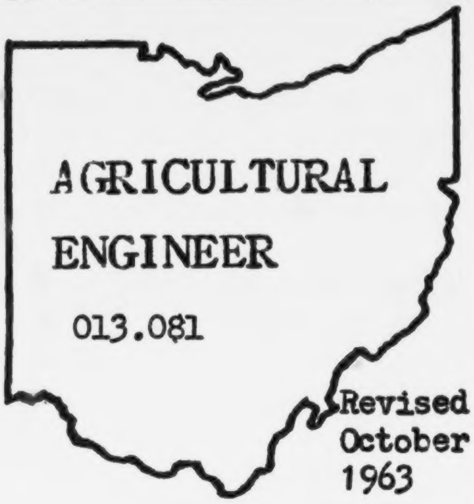
## OCCUPATIONAL RELEASE



# AGRICULTURAL ENGINEER

013.081

Revised
October
1963

**NATURE OF THE WORK** - Utilizes basic engineering principles and knowledge of biological sciences in the production and processing of farm products. Applies scientific knowledge and concepts in developing machinery, structures, equipment, practices, techniques, and methods to make farming easier, more productive and more economical. Helps to reduce many of the hazards in agriculture, both natural and man-made. Improves the quality and quantity of farm products. Reduces agricultural losses and the cost of producing, processing and marketing agricultural products. Assists others in making effective and efficient use of natural resources. Provides training, assistance, and leadership to farmers, county agents, vocational agriculture teachers, and industrial workers. May concentrate in one of the following major areas of activity. A) Electric power and processing - application and use of electrical energy for agricultural production, food and feed processing, handling, grading, and performing chores. b) Farm structures - research, design, sales, and construction of specialized structures for farm use; such as, crop and equipment storage units, processing centers, completely "climate controlled" units for maximum plant and animal production, farm homes and utility buildings. c) Power and machinery - design, development, research, sale, and service of farm machinery and equipment. d) Soil and water - use of irrigation, drainage, erosion control, land and water management practices, to conserve and utilize our vital soil and water resources.

**OPPORTUNITIES**

**Current** - Wherever food or fiber is produced or processed there are opportunities for agricultural engineers. There is a need to improve living and working conditions in all agricultural industries. Those interested in research or teaching will find opportunities on the staffs of agricultural and engineering colleges and their closely related experiment stations.

**Trends** - Expected to be favorable throughout the 1960's. Factors contributing to this favorable outlook include: 1. Increased mechanization resulting from the decline in farm population. 2. Extended use of agricultural products and waste as industrial raw materials. 3. Increased demands on existing water supplies with the resultant emphasis on sound water conservation practices. 4. Examination of factors contributing to the cost and quality of agricultural production. 5. Development of new equipment and the introduction of new machinery to the farmer. 6. Construction of farm buildings complete with automatic material handling equipment for the processing of raw materials to the consumer product.

**FIELDS OF EMPLOYMENT** - The majority are employed by industry in such areas as machinery and equipment manufacturers and suppliers. Federal, state, and local government employ a large number of agricultural engineers, the leading employer being the U. S. Department of Agriculture. Others include universities, extension service, experiment stations, soil conservation service, and forest service. Agricultural Engineers may also be employed by construction companies, farm equipment retailers and distributors, as consultants, farm management specialists, etc.

AREAS OF EMPLOYMENT - May obtain employment in a wide variety of locations - in cities or rural areas, factories or fields, in this country or abroad.

REMUNERATION - Salaries are comparable to that of a mechanical or civil engineer. Entry wages range between $500 to $660 per month for the first year of employment. This depends upon the individual's college academic record, type of employment, and possibly the size of the community. An experienced engineer's salary will average about $1000 per month. Earnings above or below this figure will depend upon such factors as experience, education, kind of work, and individual ability.

## REQUIREMENTS FOR ENTRY

General - A farm background is helpful but not essential; however, it is important that persons have a genuine interest in a rural environment and for those things associated with it - the people, crops, animals, soil, and surroundings. Have the capacity to utilize the theories of mathematics, physical and biological sciences, and possess the ability to think quantitatively, clearly, and logically. Capable of written and oral expression; ability to work with and direct the work of others; possess initiative, ingenuity, mature judgment, patience, persistence, and good health.

Education - Graduation from an accredited college or university with a Bachelor's degree in agricultural engineering. Ohio State University is the only school in Ohio offering a program of study in this field. The five year curriculum leading to a Bachelor's degree includes such areas of study as the following: engineering sciences, including computer technology; plant physiology, biochemistry and other biological sciences; mathematics, physics and soil physics, chemistry, drawing, mechanics, and applied engineering subjects; design and performance characteristics of farm machinery; development of rural electrical systems; farm building functional requirements; and engineering of soil and water resources.

Licenses and Examinations - Licensure is required by most states for the legal right to practice professional engineering where public health, life or property may be affected by the engineer's work. Requirements for registration and the cost of licensure in Ohio may be obtained from the Professional Engineers and Surveyors Board, 21 West Broad Street, Columbus 15, Ohio.

AVENUES OF PROMOTION - Promotion will depend entirely upon the initiative and ability of the worker. There is no direct or specific avenue of promotion in this field. The individual may work in a particular branch and advance in this area or gain experience and training in various branches and progress in administration.

SOURCES OF ADDITIONAL INFORMATION - Write or contact: Agricultural Engineering Department, Ives Hall, Ohio State University 2073 Neil Ave., Columbus 10, Ohio; American Society of Agricultural Engineers, St. Joseph, Michigan; Ohio Society of Professional Engineers, 5 East Long Street, Columbus 15, Ohio.

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

## AGRONOMIST

040.081-014

Revised
Dec.
1960

## OCCUPATIONAL RELEASE

NATURE OF WORK - Does research pertaining to growing, breeding, and improvement of plants which are generally grown in large acreages such as corn, wheat, tobacco, cotton, and sugar. Develops new varieties of crops more resistant to the hazards of weather, disease, and insects, and searches for better methods of growing crops and controlling weeds and pests. Agronomists may specialize in problems of a specific geographical area, a particular crop, or a technical specialty such as crop breeding or production methods.

OPPORTUNITIES

Current - Exceptional. There are openings in a great variety of fields for those who are interested in soils and crops. This occupation is on the current list of demand occupations issued by the United States Department of Labor.

Trends - With increasing population and the decline of the small farm as an efficient economic unit, scientific farming in which the agronomist plays a large part will grow increasingly important. There is no end in sight to the need for well-trained agronomists.

For women - Usually limited to technical laboratory employment.

FIELDS OF EMPLOYMENT - Most persons in this field are research men employed by State Agricultural Experiment Stations, the U.S. Department of Agriculture, and by colleges and universities. Feed and fertilizer companies also employ agronomists to assist farmers with their crop problems as a service. This work is usually of an educational nature; it may include selling, and some positions carry large amounts of responsibility with proportionate salaries. Other fields include seed producing and marketing agencies; grain elevator managership; research and organization work; teaching in State Universities, and sometimes farm operation and management. May also act as consultants to individuals or organizations, advising on soil and crop management problems.

AREAS OF EMPLOYMENT - Nationwide with emphasis on agricultural areas. Midwest States offer good opportunities.

REMUNERATION - The salary range depends upon training, experience, personality, location of the company or organization, and many other factors. Typical starting salaries range from $4000-$5500 annually, and may increase up to $8000-$10,000. In some instances, salaries go to $15,000 and beyond.

# AGRONOMIST

## METHODS AND REQUIREMENTS FOR ENTRY

Prerequisites - Graduation from an accredited four-year high school, with such subjects as biology, chemistry, physics, and algebra included in the course of study.

Higher education - For many purposes, a four-year college course will suffice. For those who desire to do university or college teaching and research in the science of soils and crops, or in the more specialized phases of industry as related to agriculture, further training, leading to the Ph.D. degree usually becomes necessary and requires an additional three years of intensive study.

Schools - Ohio State University, Columbus, Ohio, offers the most complete training in this state.

Selection factors - Interest in plant and soil processes involving complex chemical and physical reactions; previous acquaintance with farm life is helpful.

WORKING CONDITIONS - Those persons engaged in research carry out their experiments or investigations in the field, or laboratories of colleges, experiment stations and private industry.

FOR ADDITIONAL INFORMATION - Write, the American Society of Agronomy, 2702 Monroe St., Madison 5, Wisconsin; College of Agriculture and Home Economics, Department of Agronomy, Ohio State University, Columbus 15, Ohio. Local teachers of vocational agriculture or county agricultural extension agents can also give additional information on opportunities.

NOTES - (Local information, additions, etc.)

# EMPLOYMENT INFORMATION SERIES

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## ASBESTOS AND INSULATING WORKERS

863.884-026

July, 1960

### OCCUPATIONAL RELEASE

NATURE OF WORK - Asbestos and insulating workers cover pipes, boilers, and other equipment with insulating materials, such as cork, felt, asbestos, fiberglass, and magnesia. Install these materials by pasting, wiring, taping, stud-welding, spraying, or other methods. Use handtools, such as trowels, brushes, scissors, hammers, saws, pliers, and stud-welding guns. Also use powersaws to cut insulating materials. The insulating materials which these workers install serve many purposes. For example, the insulation of pipes, tanks, vats, ducts, stills, towers, boilers, and furnaces retains heat and thus saves fuel. Another function of these materials is to insulate the piping in refrigeration systems to prevent the absorption of heat.

OPPORTUNITIES

Current - Nationally, the anticipated sharp rise in construction should provide an increase in employment in this relatively small field of work. This factor, in addition to replacement needs, should result in 1000 to 1500 openings annually. Locally, up-to-date information should be obtained from unions, contractors, and Ohio State Employment Service local offices.

Trends - The increasing use of industrial pipe, required for numerous manufacturing processes, such as those found in the petroleum and chemical industries, and in industries where refrigeration and air-conditioning installations are used, will require increasing numbers of asbestos workers for installation and maintenance work.

FIELDS OF EMPLOYMENT - Most asbestos workers are employed by insulation contractors in new industrial and commercial construction. A substantial number are also employed in alteration and maintenance work. Chemical plants, petroleum refineries, rubber plants, atomic energy installations, shipyards, and other industrial establishments which have extensive steam installations for power and heating, employ asbestos workers for alteration and maintenance of their insulated pipework. Also, some large establishments which have cold storage facilities employ asbestos workers for maintenance work.

AREAS OF EMPLOYMENT - Nation-wide and State-wide with concentrations in the more highly populated and industrialized centers.

REMUNERATION - 1958 survey of 52 large cities showed minimum union wages averaging $3.64 an hour. 1960 union wage in representative Ohio area--$3.76 an hour.

# ASBESTOS AND INSULATING WORKERS

METHOD OF ENTRY AND REQUIREMENTS - Most asbestos workers learn their trade through a 4-year "improvership" program that is similar in many respects to apprenticeship programs found in other building trades. The improvership program consists of a specified period of on-the-job training in which the new workers learn how to handle the tools of the trade and to work with various kinds of insulating materials. Applicants for improvership programs are generally required to be between the ages of 18 and 30 and in good physical condition. At the end of the 4-year program, trainees are required to pass an examination which demonstrates their knowledge of the trade.

Union membership - A large proportion of the workers in this trade are members of the International Association of Heat and Frost Insulators and Asbestos Workers.

WORKING CONDITIONS - Prolonged standing, bending, stooping, and working in cramped quarters is frequently necessary.

AVENUES OF PROMOTION - A skilled asbestos worker may advance to the job of foreman, shop superintendent, or estimator, or he may open his own insulation contracting business.

ADDITIONAL INFORMATION - Local contractors, unions, and local offices of the Ohio State Employment Service.

NOTES - (Local opportunities, wages, etc.)

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Written: January 1968

## AUTO BODY REPAIRMAN
807.381

NATURE OF THE WORK An auto body repairman repairs and/or replaces parts of and paints automobile frames. He may use special air tools to bump out dents or may fill uneven spots with solder. The auto body repairman may use special machines to align vehicle frames and body sections damaged in collisions. In some shops he may paint the auto after completing the body work. Some auto body repairmen work in custom body shops, modifying various parts of auto bodies according to owner specifications or in building special bodies for vehicles such as ambulances, trucks, and buses.

EMPLOYMENT OUTLOOK The need for automobile body repairmen is expected to rise, primarily as a result of the increasing number of automobiles and proportionate increase in the accident rate. Men will also be needed to replace those who retire or change occupations. Opportunities for self-employment are very good.

REMUNERATION Most body and fender men specialize in this work and work on a commission rate ranging from 50-60 per cent of the total labor charge of the individual repair job. Apprentice wage rates vary from 60-75 per cent of the journeyman's salary. Helpers rates range from $2.25 to $2.75 per hour. Fringe benefits vary from shop to shop with the large shops generally offering hospitalization, among other benefits.

### REQUIREMENTS FOR ENTRY

General An automobile body repairman must be in good physical condition since he does much standing, stooping, bending, and kneeling. He frequently works in cramped positions and must be able to do heavy lifting. Manual dexterity, spatial perception, and the ability to use hand tools are important.

Educational requirements vary. Most employers prefer to hire high school graduates all other qualifications being equal. Graduates of vocational high schools or trade schools receive hiring preference.

Training Some high schools offer vocational automobile body repair courses which provide a good background for entry into formal or informal on-the-job training. Some programs offer the student the opportunity for part-time work in a body shop while attending high school. Formal apprentice training is available to qualified applicants and consists of both classroom work and supervised practical experience. Apprenticeship in auto body work requires 3 to 4 years. Opportunities can be located by contacting your local Ohio State Employment Service Office. Some shops also offer informal on-the-job training. The applicant is hired as a helper and gradually becomes a journeyman by observing and working under an experienced repairman's supervision. Entry training may also be available under MDTA in some areas.

WORKING CONDITIONS Working conditions vary among the different shops. Dust, dirt, noise, fumes, grease, and oil can all be present. Good safety practices are necessary to protect oneself from burns, cuts, and strains.

AVENUES OF PROMOTION A repairman in a large shop may advance to supervisory positions, such as repair shop foreman, service salesman, or service manager. He may also open his own shop.

SOURCES OF ADDITIONAL INFORMATION Contact: Local body shops, the Ohio State Employment Service Office in your community.

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by the
Counseling Section
Ohio Bureau of Employment Services
145 South Front Street
Columbus, Ohio 43216

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: May 1968

# AUTOMOBILE MECHANIC
620.281-014

NATURE OF THE WORK The services of an automobile mechanic are as different as the demands of individual employers. He may diagnose mechanical trouble, estimate repair and rebuilding costs, repair and replace parts, adjust engines and related parts, re-align automobiles and trucks, and, on occasion, do minor body alteration and repair. In larger shops, teams of mechanics work, each in one or more special area, to make a more efficient production system and to provide the best specialized service from their experience. Areas of specialization may be any of those listed above; the most specialized area, however, and that requiring the most select knowledge is transmission service and repair. Here, consultation among mechanics is frequent; and, although individually specialized, each mechanic must maintain a general working knowledge of all facets of the work to be most useful to fellow-workers and customers alike. Where fewer mechanics are employed, a knowledge of all kinds of service and repair may be necessary; the mechanic may be the veritable "jack-of-all-trades". Each mechanic must have his own set of smaller tools: wrenches, pliers, screwdrivers, etc., the larger tools being provided by each employer.

In addition to these in-shop responsibilities, the automobile mechanic may answer service calls, assist in wrecker services, and perform out-of-shop consultant services.

The automobile mechanic, in performing a variety of duties from motor lubrication to front-end alignment, serves, with fender and body repairmen, painters, automotive re-upholsterers, and apprentices and helpers in all areas, to keep each car and truck in top condition in the most reasonable and efficient manner.

EMPLOYMENT OUTLOOK The need for skilled, trained automobile mechanics today, as well as for fender and body repairmen and painters, is acute in selected Ohio metropolitan areas. Greater earning power, more vacation time and travel in each family, expanded local transportation and service, and owners' demands for better and more frequent automotive care mean more cars and trucks in service and a need for more automotive service centers. This shortage in mechanics has resulted because fewer and fewer young men have been trained in the past decade. Today less than two percent (2%) of all those employed as automobile mechanics are apprentices; as a result, the replacement need in this field will continue to grow in the immediate future.

The Bureau of Labor Statustics estimates a 42.3% growth in the service area and a 34.9% increase in the machine trades area by 1975, both figures reflecting an increasing need for automobile mechanics and for apprentice training candidates. Employment in metropolitan areas will, as always, be greater due to concentrations of motor vehicles and repair shops in those areas.

## CLOSELY RELATED OCCUPATIONS

Air-Conditioning Mechanic
Bus Mechanic
Foreign Car Mechanic
Auto Body Repairmen
Wreckers
Machine Assembler (all industries)
Motor Inspectors
Painters
Test Drivers, Motor Vehicles

**AREAS OF EMPLOYMENT** The automobile mechanic is found in each business where auto and truck service and repair are necessary: independent auto repair shops as employees and owners, new and used car dealers' service departments, gasoline stations, services departments of companies maintaining fleets of trucks and cars, trucking companies, taxicab companies, and in the manufacturing industry making minor repairs and adjustments for new cars and trucks.

**REMUNERATION** Most skilled mechanics working in independent repair shops or in company service departments earn a flat rate or percentage commission (approximately 50%) of the total labor charge of each repair job. A good mechanic can earn over $200.00 per week. Mechanics in new car dealers' service departments earn a flat hourly rate of from $2.95 to $3.15 average per hour. Apprentices' salaries begin at 60% to 75% of the journeyman's rate and increase proportionately during the four (4) year apprenticeship to 90% to 95% of the journeyman's salary. Helpers' salaries range from $2.25 to $2.75 per hour.

Fringe benefits vary among shops: larger shops generally offer hospitalization and similar medical benefits in addition to paid vacation time; smaller shops' benefits vary with the size of the business and the amount and variety of work. Those who specialize in truck repair average from $3.20 to $3.90 per hour depending on the type truck serviced. Owners and employers alike are agreed that entry wages for both apprentices and journeymen must be raised to meet the current service demands and comparable wage rates in other related industries.

## REQUIREMENTS FOR ENTRY

General Applicants in general must demonstrate a basic interest in automobile mechanics as well as manual dexterity, an above average mechanical aptitude, and a pride in workmanship. Good health and stamina are necessary for the strenuous, often uncomfortable, work - lifting, pulling, stooping, and bending all involved in each day's routine. Each mechanic, in addition, must have his own set of smaller tools.

Education Educational requirements vary, but, generally, employers prefer to employ high school graduates, all other qualifications being equal. Graduates of vocational high schools and trade schools may receive hiring preference because their formal schooling has included practical, on-the-job training and experience.

Training Several high schools, and the number is increasing, offer vocational courses in automobile mechanics which provide a good background for entry into formal and informal on-the-job training. These programs may offer the opportunity for part-time work in a nearby repair shop while attending school. Formal apprenticeship training is available to qualified applicants and consists of both classroom work and supervised practical experience. Some shops offer informal on-the-job training where the applicant, hired as a helper, learns the trade by observing and working under the guidance of an experienced mechanic. Entry training may also be available under MDTA in some areas of the state. Contact the nearest office of the Ohio State Employment Service for information relating to MDTA training.

AVENUES OF PROMOTION In larger shops, the automobile mechanic may advance to shop foreman, service consultant, service salesman, or service manager. He may specialize in one phase of service and repair and supervise others in that area of specialty. Unlimited possibilities exist for the automobile mechanic who opens his own shop.

WORKING CONDITIONS Automobile mechanics' work is not glamorous. Dust, dirt, noise, fumes, grease, and oil do not make the strenuous work easier. The mechanic must exercise good safety practices to avoid cuts, burns, and strains. Hours in smaller shops especially are often long and irregular. A combination of the working conditions and the wages, which fall, in many cases, below comparable industry and commercial rates, deter many young men from entering this occupation.

SOURCES OF ADDITIONAL INFORMATION Write or Contact:

1) Local offices of the Ohio State Employment Service.

2) Local automotive service centers.

3) International Association of Machinists and Aerospace Workers
912 Adams Street
Toledo, Ohio 43624

4) State Department of Education
Division of Vocational Education
Supervisor, Trade and Industrial Education
610 Ohio Departments Building
65 South Front Street
Columbus, Ohio 43215

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# Employment Information Series

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BAKER
526.781-010

**NATURE OF THE WORK** Starting with recipes and raw ingredients, the baker makes rolls, breads of all kinds, cakes, pies, pastries, biscuits, doughnuts, crackers, and other types of edible baked foods. Depending on the size and degree of mechanization of the shop, the baker's duties differ somewhat. In small retail shops he may work by hand with few mechanical devices to assist him: he mixes ingredients, divides and shapes the raised dough, and places it in an oven. He may also decorate specialties by hand. Moreover, he may be responsible for estimating and budgeting costs of ingredients, equipment, and maintenance operations. In large plants the baker operates equipment which mixes ingredients, divides, forms, and bakes products. This requires a knowledge of ovens, mixing, molding, and wrapping machines, and all other equipment used in producing special items, such as doughnuts and pretzels. In larger mechanized plants, the baker may work in a supervisory capacity, with semiskilled helpers performing the simpler tasks.

Some bakers specialize in one product, such as bread or pies, or in baked goods of a particular nationality, such as French or Italian.

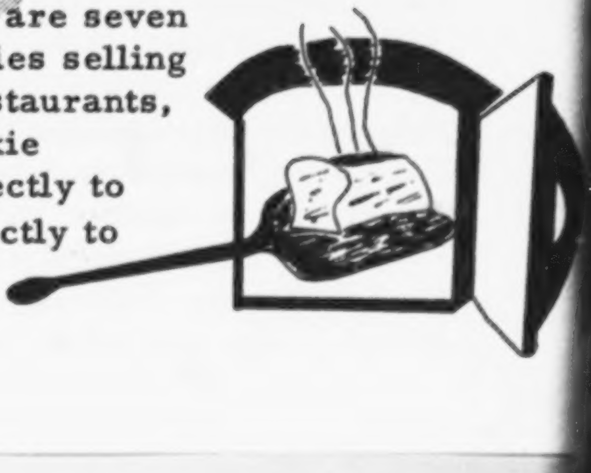
## OPPORTUNITIES

**Current** Over 5,000 bakery workers are needed each year in the United States to replace those who retire, die, or leave their jobs for other reasons. Opportunities are good in restaurants, hotels, and neighborhood bakeries and also in firms that produce ready mixes and ready-bake products in dough form.

**Trends** The job outlook for skilled, all-round bakers is bright. As the population grows and more women seek jobs outside the home, the demand for bakery products will increase. The trend toward mechanization of the industry, however, does mean fewer opportunities for semiskilled bakery production workers. There is plenty of room for high quality retail bake shops. The prospects for bakery proprietors are somewhat limited, however, due to long working hours and price competition from large firms and chains.

**Women** The great majority of commercial bakers are men. In large plants women work as semiskilled machine operators, for example, on slicing and wrapping machines.

**FIELDS OF EMPLOYMENT.** Within the industry there are seven main types of firms offering job possibilities: (1) bakeries selling primarily to grocers; (2) bakeries selling to hotels, restaurants, and other institutions serving food; (3) cracker and cookie bakeries; (4) multiple-store-retail bakeries selling directly to the consumer; (5) individual retail bakeries selling directly to



the consumer; (6) home service bakeries selling directly at the consumer's residence; (7) bakeries operated by grocery chains. Establishments that prepare and serve food themselves, such as hotels and hospitals, also hire bakers.

AREAS OF EMPLOYMENT There are 1,400 bakeries in Ohio. (This figure includes the seven types of firms described above plus pizza bakeries.) Bakery employees registered with the Ohio Department of Industrial Relations in October, 1965, total 13,251 -- 10,203 male, 3,048 female. Although bake shops and bakers are found in every Ohio community, there are large concentrations in Columbus, Cincinnati, Cleveland, Akron, and Dayton.

REMUNERATION The wage rates of current union contracts in various Ohio cities range as follows: baking foremen and all-round bakers, $2.31-$3.045; mixers, $2.21-$2.925; dividermen and benchmen, $2.42-$2.83; icers and decorators, $2.39-$2.88; ovenmen, $2.13-$2.89; general helpers, $1.89-$2.72. Paid vacations ranging from one to four weeks, depending on length of service, are alloted by most companies. The majority of companies also have various insurance and pension arrangements for their employees.

## REQUIREMENTS FOR ENTRY

Selection Factors at least 18 years of age, physical capability to sustain lifting, standing, and carrying for long periods of time and in extremes of heat, ability to read and write, habits of neatness and cleanliness, above average manipulative abilities, accurate spatial judgment, good taste and smell senses, willingness to perform repetitive tasks, artistic baking talent, a natural interest in foods and food preparation. Most states require bakers to obtain a health certificate which attests to freedom from contagious diseases.

Education and Training Although a high school education is desirable, no definite formal education is necessary for entry jobs. Most individuals, especially in mechanized plants, learn the trade through on-the-job training; from two to four years' training is needed to become an all-round baker (journeyman baker). Taking special courses in an accredited school is a second way of acquiring baking skills. Additional information on public school courses may be obtained from The State Department of Education, Division of Vocational Education, Ohio Departments Building, South Front Street, Columbus, Ohio 43216. There are several private baking schools throughout the country; a few offer scholarships. Details may be obtained from the Allied Trades of the Baking Industry, 625 Madison Avenue, New York 22, New York. Public training courses are periodically held for bakers and baker helpers throughout the state. For further information, write to the Ohio State Employment Service, Manpower Development Section, 145 South Front Street, Columbus, Ohio 43216. The third method of entering the field is by serving an apprenticeship which extends between three and four years. To qualify one must be: between 18 and 26, in good health, a graduate of either a high school or a vocational school, and definitely interested in baking.

Additional information may be obtained from the local representative of the Bureau of Apprenticeship Training.

The student, who is thinking about entering this field, may want to determine the extent of his interest and ability by obtaining summer or part-time employment in a bakery in some semiskilled or sales job.

Union Membership About 70 percent of all bakers are members of either the American Bakery and Confectionery Workers International Union or the Bakery and Confectionery Workers International Union of America.

WORKING CONDITIONS Bakers work from 8 to 10 hours for 5 to 6 days per week, averaging from 30 to 60 hours per week. Union shops in Ohio work 40 hours per week. Bakery proprietors may work up to 60 or more hours per week. Large plants operate two and three shifts six days a week. Sunday and holiday work may be required. Seasons of the year and economic conditions do not affect the demand for baked goods, so employment is steady.

Shops are generally well lighted, well equipped, and sanitary, and precautions are taken against accidents. Working on power-driven bakery machines, however, is considered sufficiently hazardous by the U.S. Department of Labor so that youths under 18 years of age cannot be employed to do this work.

The baker stands most of the day; moreover, he does considerable walking, reaching, stooping, grasping, carrying, pushing, and lifting. Modern plants are often air-conditioned; however, in those plants that are not, the baker is subject to heat extremes. He may also be subject to various fumes, odors, and flour particles in the air.

PROMOTION POSSIBILITIES A skilled baker may be promoted to working foreman, department foreman, production manager, sales manager, or plant superintendent. All-round bakers with business ability may go into business for themselves. Bases for promotion include experience, education, and demonstrated initiative and ability.

PLACEMENT SERVICES Contact the local public employment service office, the local bakers' union, commercial employment agencies.

SOURCES OF ADDITIONAL INFORMATION American Bakers Association, 20 North Wacker Drive, Chicago, Illinois 60606; American Bakery and Confectionery Workers International Union, 1711 Connecticut Avenue, N.W., Washington 6, D.C.; Bakery and Confectionery Workers International Union of America, 1000 Sixteenth Street, N.W., Washington 6, D.C.; The Associated Retail Bakers of America, 735 West Sheridan Road, Chicago 13, Illinois; Ohio Bakers Association, 101 North High Street, Columbus, Ohio 43215.

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## BAKING INDUSTRY

NATURE OF THE INDUSTRY The baking industry is the second largest food processing industry in the United States; it employs thousands of people in the production of a variety of perishable baked foods, such as bread and pastries, and dry baked goods, such as pretzels and ice cream cones.

According to the 1963-64 Occupational Outlook Handbook, there were more than 260,000 men and women employed in more than 6,000 industrial bakeries throughout the nation in 1962. Three-fourths of these people were in wholesale bakeries. An additional 85,000 men and women, including shopowners, were employed in nearly 12,000 neighborhood retail bake shops. About 40,000 workers were employed in the production of dry baked goods.

Within the industry, bakery firms are classified into seven main types: (1) bakeries selling primarily to grocers; (2) bakeries selling to hotels, restaurants, and other institutions serving food; (3) cracker and cookie bakeries; (4) multiple-store-retail bakeries selling directly to the consumer; (5) individual retail bakeries selling directly to the consumer; (6) home service bakeries selling directly at the consumer's residence; (7) bakeries operated by grocery chains.

OCCUPATIONS IN THE INDUSTRY Occupations in the baking industry may generally be divided into the following categories: (1) production, (2) sales, (3) maintenance, and (4) management. The number and specific types of jobs available are dependent on the size and degree of mechanization in the individual bakery establishment.

Fifty-five percent of all workers are production personnel. This may include: mixers, who weigh the various ingredients and assemble them in blending machines; dividermen, who operate machines that divide the dough according to the weight of the loaf to be produced; dough molders, or molding machine operators, who operate machines that press air bubbles from the dough and form it into loaves or rolls; bench hands, who knead and form fancy-shaped items by hand; ovenmen, who adjust temperature and timing devices on the ovens; slicing and wrapping machine operators, who place loaves onto conveyors feeding into slicing and wrapping machines and who keep these machines supplied with waxed paper and labels; icing mixers, who prepare cake icings and fillings and spread them on; helpers, who assist the production workers by handling routine jobs; receiving, stock, and shipping clerks, who check and keep records of incoming raw materials and outgoing shipments.

In heavily mechanized plants, all-round journeyman and master bakers act as supervisors. They inspect the work of production crews and machines and plan operations so that they mesh with activities of other departments to meet production

schedules. In small retail bakeries, the all-round baker, with the assistance of several helpers, does all the work necessary to change raw ingredients into finished bakery items.

About one-fourth of the industry's total work force is engaged in sales; these personnel are route supervisors, home service salesmen, wholesale salesmen, and retail store clerks. Route supervisors manage a group of driver-salesmen; they train new salesmen and service a route temporarily when a driver is absent. Home service salesmen and wholesale salesmen deliver bakery items to homes and grocery stores along their assigned routes and collect payment for deliveries. They also try to increase their customers' orders and to gain new customers. At the end of the day, they make a report of the day's transactions and write an estimate of goods needed for the next day. Wholesale driver-salesmen arrange their products on shelves or display racks in grocery stores. Retail store clerks wrap purchases and take payments from customers who come into the shop.

Maintenance positions include stationary engineers, electricians, machinists, maintenance machinists, and automotive mechanics. These individuals maintain and repair the bakery machines and equipment. In large firms automotive mechanics must keep the truck fleet in good repair.

Management is responsible for the overall operation of the company; top executive officials are the proprietor, president, vice president, superintendent, plant manager, branch manager, comptroller, and sales manager. The second level in the management echelon are those who direct individual departments or special phases of a firm's operations, such as accounting, advertising, purchasing, personnel and industrial relations, and laboratory testing. Finally, bakeries employ many types of clerical workers, such as bookkeepers, cashiers, business machine operators, stenographers, typists, switchboard operators, and general office clerks.

## OPPORTUNITIES

Current Current opportunities are good. Due to expansion and replacement needs throughout the country, there are over 10,000 job openings in the industry every year. Since all types of firms must deliver their products soon after they are baked, baking is of necessity a local industry; this means job opportunities exist in almost every community.

Trends There will be an increased need for driver-salesmen, clerical workers, maintenance workers, and skilled bakers. Opportunities for semiskilled bakery production workers will decrease, however, due to greater mechanization in plants and shorter, improved methods of processing baked goods.

Women Women account for approximately 20% of the industry's national working force. Most are employed in clerical positions. Some have production jobs, such as slicing machine operator and pie and cake wrapper. In neighborhood bakeshops many work as sales clerks. Very few women are employed as skilled bakers, and these few work in small shops.

FIELDS OF EMPLOYMENT The field encompasses each of the seven types of firms discussed above under "Nature of the Industry."

AREAS OF EMPLOYMENT The baking industry in this state does $245 million worth of business each year. (This figure represents the value of one loaf of bread for each Ohioan every three days, the national average consumed.) Including the seven types of firms described above plus pizza shops, there are 1,400 bakeries in Ohio employing a total of 13,251 people -- 10,203 male, 3,048 female. These bakeries and bakers are located in every Ohio community; however, there are large concentrations in Columbus, Cincinnati, Cleveland, Akron, and Dayton.

RATES OF PAY Current minimum hourly rates in the major baking occupations in Ohio generally range as follows: baking foreman (and all-round bakers), $2.31-$3.04 1/2; mixers (dough or icing), $2.21-$2.92 1/2; dividermen and benchmen, $2.42-$2.83; ovenmen, $2.13-$2.89; icers and decorators, $2.39-$2.88; slicing and wrapping machine operators, $1.96-$2.88; general helpers, $1.89-$2.72; maintenance mechanics, $2.56-$2.93; maintenance helpers, $2.34-$2.82.

Driver-salesmen average $56 a week plus 9% comission of their dollar sales, guaranteed $100 a week. Route foremen average $135 a week. Transport drivers average $3.10 an hour. The pay scale for managerial and clerical positions compares favorably with other industries.

Paid vacations are almost universal. Some type of insurance and pension arrangements are also being incorporated by many employers.

UNION REPRESENTATION Bakery production workers are represented either by the American Bakery and Confectionery Workers International Union or the Bakery and Confectionery Workers International Union of America. Driver-salesmen and transport drivers generally are members of the International Brotherhood of Teamsters, Chauffeurs, Warehousemen, and Helpers of America. Some maintenance men are members of craft unions, such as the International Association of Machinists and the International Union of Operating Engineers.

WORKING CONDITIONS Most plant workers are on a 40-hour workweek, although some work 35 or 37 1/2 hours and others 44 to 48 hours regularly. Time and a half is paid for all over-time. Bakery production jobs involve physically strenuous work and exposure to heat extremes, fumes, and flour particles in the air. Home service and wholesale drivers spend a great deal of their time out of doors. Office employees usually work in well equipped, pleasant surroundings.

SOURCES OF ADDITIONAL INFORMATION American Bakers Association, 20 North Wacker Drive, Chicago, Illinois 60606; American Bakery and Confectionery Workers International Union, 1120 Connecticut Avenue, N.W., Washington 6, D.C.; Bakery and Confectionery Workers International Union of America, 1000 Sixteenth Street, N.W., Washington 6, D.C.; The Associated Retail Bakers of America, 735 West Sheridan Road, Chicago 13, Illinois.

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# EMPLOYMENT INFORMATION SERIES

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BELLMEN
324.878-014
AND
BELL CAPTAINS
324.138-014

June, 1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Bellmen, also called bellboys or bellhops, carry baggage and perform a variety of other services for hotel guests. After a guest has registered, bellmen obtain the room key, take the guest to his room, and deposit his baggage. Check the lights and supply of towels and soap, and see that everything is in order in the room. May suggest the use of various hotel services, including the dining room and the valet service. Also deliver packages and perform other errands for guests. In large hotels, special baggage porters are usually employed to carry baggage for guests who are checking out. In smaller hotels, bellmen carry baggage for outgoing as well as incoming guests and may also relieve the elevator operator or switchboard operator.

Bell captains are employed in large hotels and many medium-sized ones, to supervise the bellmen. Assign work to these employees, keep their time records, and instruct new bellmen in their duties. In addition, handle complaints from guests regarding the work of their department, and take care of unusual requests for service. May also help guests arrange for transportation by giving them information on train and plane schedules and sending a baggage porter or a bellman to pick up the transportation tickets. At times, bell captains may also perform the duties of bellmen.

**OPPORTUNITIES**

**Current** - The early 1960's should provide a few thousand openings annually nationally for bellmen, mostly from turnover resulting from students who have used this occupation as part-time work and for those who find it easy to obtain other employment due to favorable economic conditions.

**Trends** - Only a slight growth in employment is anticipated in the long run.

**FIELDS OF EMPLOYMENT** - Large and small hotels, very slight opportunity in motels.

**AREAS OF EMPLOYMENT** - Cities of all sizes and in resort areas.

**REMUNERATION** - In New York City in 1958 salaries ranged from about $27 to $34 for a 5-day, 40 hour week. Double this amount or more was probably received in tips. In large luxury hotels or in resort areas bellmen may earn $100 a week or more (including tips.) Earnings in Ohio vary considerably, depending upon the location, size, and type of hotel.

**METHOD OF ENTRY** - Since promotion from within is followed by many hotels, chances for outsiders to enter as bellmen will be best in resort hotels, or in small hotels where experienced bellmen are more apt to shift to bigger hotels for the possibility of higher tips. Competition among bellmen for the relatively few bell captain jobs that will become available is expected to remain keen.

REQUIREMENTS FOR ENTRY - Because this is public contact work with access to guests' personal belongings, bellmen should be honest, neat, tactful and courteous. Work and character references must be excellent. They must also be able to be on their feet all day and to carry heavy baggage. No specific educational requirements exist. Courses covered by a small but growing number of trade and vocational schools are generally helpful in obtaining jobs. Graduation from high school can be important in qualifying for transfer to front office clerical jobs which offer better opportunities for promotion.

WORKING CONDITIONS - May work on any one of three shifts, starting early in the morning, in the mid-afternoon, or at midnight. Meals are included if a meal-time occurs within a shift period, in some instances. Clean and pleasant surroundings are the rule.

AVENUES OF PROMOTION - Chance for advancement is based on bellman's work record--a minimum number of complaints by guests, good work habits, and leadership qualities. Bell captain is the next step higher, and following that, superintendent of service which is found in a limited number of large hotels with large service departments.

Unions - Some bellmen are members of the Building Service Employees International Union.

SOURCES FOR ADDITIONAL INFORMATION - Local hotels.

NOTES - (Local opportunities, wages, etc.)

# Employment Information Series

**Revised**
**April - 1966**

**Bookkeeper I**
**210.388 (1-01.02)**

NATURE OF THE WORK Bookkeeping is the recording function of accounting, and a bookkeeper is the person who performs this recordkeeping. The specific duties of the individual bookkeeper depend upon the type and size of business in which she is employed, the number of other clerical personnel employed, and the type of accounting system maintained. In a large office she may be assigned to a single operation, such as accounts payable; in a small office her duties may be many and varied. Generally speaking, however, this occupation includes one or all of the following responsibilities.

She analyzes all financial transactions, such as cash sales, orders, checks, and bills, to determine whether they are credits or debits. She chronologically records each transaction in either one of two types of journals maintained by the firm — a general, all-inclusive journal or specialized journals, such as a cash journal, an accounts-receivable journal. For each journal entry, she writes the date on which the transaction occurred, the type and amount of credit or debit, and a very brief explanation of the transaction.

Periodically, all journal records are transferred into a ledger which is the final book of accounts. At the end of each fiscal period, the bookkeeper closes the income and expense accounts in the ledger and transfers the business's profit or net loss to a current account.

In addition to keeping the books, she periodically prepares a profit and loss statement (which shows whether the business is operating at a profit or loss and by how much) and a balance sheet (which shows the company's financial condition as of a certain date); these reports help the firm plan future financial operations.

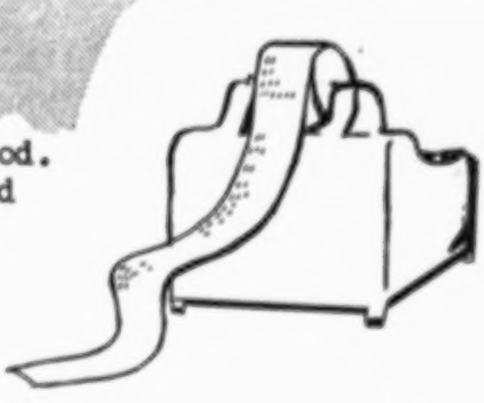
The bookkeeper may also process all checks and cash received by the company and ensure that they are deposited in the bank. Moreover, in many offices she is responsible for writing checks to pay the company's bills. She may keep the payroll record and calculate wages of employees; deductions for income tax, social security, and other withholdings are part of her calculations.

In small offices, she may prepare and type monthly statements to customers, take telephone orders, serve as cashier or receptionist, and handle the mail.

In the performance of all these duties, the bookkeeper may use a variety of office equipment, including typewriters, calculators or adding machines, files, bookkeeping machines, check writers, telephones, dictating machines, staplers, postal scales, and postage machines.

OPPORTUNITIES

Current Current employment opportunities are good. There are over a million workers employed in the United States of which approximately three-fourths are women.



Turnover rate is high. More than 50,000 openings for bookkeepers are expected each year during the remainder of the 1960's; most of these will result from deaths, retirements, and job changes.

**Trends** Over the long run, growth in the number of workers is expected to rise moderately. New jobs will result each year due to such factors as the increased emphasis put on scientific management in industry, more complicated tax systems, and general economic development. Field growth will be limited, however, because of companies' increased use of timesaving bookkeeping machines, electronic computers, and other automated equipment.

The best opportunities will continue to be for those individuals who are qualified to assume responsibility for a complete set of books.

**Men** Approximately 250,000 men are employed in bookkeeping jobs in the United States. A large number of openings occur each year as personnel die, retire, or change jobs.

Men bookkeepers are usually paid more than women in similar positions.

**FIELDS OF EMPLOYMENT** According to the U.S. Bureau of Labor Statistics, over one third of all bookkeepers are employed by wholesale and retail establishments, one fifth by manufacturers, and one fifth by finance, insurance, and real estate firms. Opportunities also exist in transportation companies, construction companies, utility companies, and business and professional services. Individuals with the necessary capital may open their own bookkeeping service firms.

**AREAS OF EMPLOYMENT** In 1960 there were an estimated 42,602 bookkeepers employed in Ohio -- 36,648 women and 5,954 men.

**REMUNERATION** Beginning bookkeepers in Ohio receive from $65 to $85 a week. Experienced workers range from $80 to $100 a week. Men earn from $10 to $20 a week more. Salaries are highest in large cities and in manufacturing firms.

Businesses usually provide two weeks' paid vacation after one year of service. Other benefits include life and medical insurance plans and retirement pension systems.

## REQUIREMENTS FOR ENTRY

**Selection Factors** mathematical aptitude, manual dexterity, ability to concentrate and work accurately with detail for long periods of time, interes in business operations, good memory, legibility of handwriting and neat work habits, patience, honesty

**Education and Training** High school graduation is usually required for this occupation. A general academic curriculum, which includes available courses in general mathematics, business arithmetic, elementary algebra, introduction to business, and business law, is recommended. Typing should also prove useful.

Whether to take any bookkeeping courses in high school is open to question. Most large businesses have their own accounting systems and prefer to train individuals in their own procedures. It is suggested that a student discuss this means of entry with several local employers who have the type of firms she wants to enter.

Again, there are many employers who prefer to hire high school graduates who have acquired some business school training in bookkeeping. (Business schools usually recommend a general academic high school curriculum as a background for entrance into their training.) A "Directory of Business Schools in the United States" may be obtained from The United Business Schools Association.

Public training courses for bookkeeper are periodically held throughout the state. Details may be obtained from the Bureau of Unemployment Compensation, Manpower Development Section, 145 South Front Street, Columbus, Ohio 43216.

A student who is interested in this occupation should consider a summer or part-time clerical job in an office employing bookkeepers. This would lend an opportunity to gain first-hand knowledge of the job.

WORKING CONDITIONS Most offices operate on a five-day week of forty hours. There is a recent trend in larger cities, however, toward a thirty-five hour week.

Office surroundings are usually well lighted, ventilated, and comfortable. The close work demands considerable concentration and, on some occasions, may become monotonous. Eyestrain is a possible hazard.

PROMOTION POSSIBILITIES Beginners usually start as assistants or clerks aiding bookkeepers and may subsequently advance to head bookkeeper. Thereafter, promotional possibilities are limited.

PLACEMENT SERVICES Contact the local public employment service office, placement offices of business schools, personnel offices of organizations that employ bookkeepers, and commercial employment agencies.

SOURCES OF ADDITIONAL INFORMATION The United Business Schools Association, 1101 Seventeenth Street, N.W., Washington, D.C. 20036; "Employment Outlook for Bookkeeping Workers and Office Machine Operators" (10¢), Bureau of Labor Statistics, U.S. Department of Labor, Superintendent of Documents, Washington, D.C. 20402.

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Counseling Section
Ohio State Employment Service
Bureau of Unemployment Compensation

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: May 1968

# BRICKLAYER
# (CONSTRUCTION)
861.381-010

NATURE OF THE WORK The bricklayer, who combines many skills, constructs and repairs a variety of structures from walls and partitions to chimneys and fireplaces. Most bricklayers are employed by general contractors in new building construction; the remainder work as industrial and private repair and maintenance masons. Although the majority of bricklayers work in all facets of brick masonry, many find that specializing brings more constant and rewarding work. A brick mason may specialize in brick and terra cotta veneer work; he may set gypsum and plaster block for building interiors; he may work for a sewer construction company; he may devote his time to alteration and restoration work - replacing mortar, rebuilding corners and weakened brick building faces; or he may provide industrial service by building kilns, constructing factory chimneys, or lining kilns and molds.

No matter where the bricklayer is found, the basic knowledge he applies remains the same. He must be able to read blue prints to determine how and where his services are required. He must take accurate measurements before and during each step of masonry work. He works the alternate beds of brick and mortar into a design consistent with the rest of the structure and finishes the work by removing excess mortar and smoothing each mortar seam.

The bricklayer, like many skilled craftsmen, owns his own tools: chisels, trowels, jointers, brick hammers, gauge lines, plumb bobs, and mason's levels. He works with a variety of materials: brick, concrete block, gypsum block, cinder block, and terra cotta, a hard-baked ornamental brick. In the past, the mason also worked with structural (hollow) tile and glass block; today, however, due to changing construction methods and popular styles, these kinds of masonry, particularly glass block, are used less and less.

EMPLOYMENT OUTLOOK The Bureau of Labor Statistics estimates that the service area, that into which repair and maintenance bricklayers fall, will grow by 42.3% by 1975. In addition, contract construction will increase 31.7% by 1975. These figures indicate a steadily increasing need for bricklayers' skills.

Several factors indicate that the percentage increase of bricklayers in the next seven (7) years may not be consistent with overall growth in the construction and service areas: 1) new construction methods call for less and less brick, 2) new technical advancements are relieving the brickmason's overall responsibilities, and 3) structural tile and glass block are being used less and less.

In the near future, the larger numbers of bricklayers will find more employment opportunities in general contracting work - home and commercial construction and ornamental work - and in the field of restoration and maintenance.

## CLOSELY RELATED OCCUPATIONS

Cement Mason
Marble Setter
Plasterer
Lather
Stone Mason
Terrazzo and Tile Mason
All masonry helpers, apprentices, and hod carriers

**AREAS OF EMPLOYMENT** The largest number of bricklayers work in metropolitan areas where centers of commercial and residential construction are found. Other areas of employment include private and masonry contracting firms, sewer construction - both in private and public employment, restoration and maintenance firms, and private industry in foundries and auto, steel, brick, glass, and tile manufacturing firms.

**REMUNERATION** Bricklayers and workers employed in related occupations earn between $3.25 and $5.65 per hour average plus fringe benefits, paid on an hourly basis. Those benefits offered by larger companies and for union workers generally include hospitalization, pension, medical insurance, Social Security, and unemployment benefits. In Ohio the minimum union journeyman's wage is $4.80 per hour plus fringe benefits. Non-union journeymen earn, on an average, between 10% and 20% less per hour than union members, the difference being measured in fringe benefits offered. Maintenance bricklayers average between $3.00 and $4.00 per hour. Apprentices' salaries begin at 40% to 60% of the journeyman's wage and increase proportionately during the 3 to 4 year program to between 90% and 95% of the journeyman's wage for the last 6 months of training.

## REQUIREMENTS FOR ENTRY

**General** The prospective bricklayer, although other occupations in the construction area require greater strength and endurance, must be of sound health and good stamina. He must be able to follow instructions, have good hand-eye coordination, a high degree of manual dexterity, and good visual prospective.

Education and Training Requirements for entry, due to greater and greater numbers of apprentice applicants, are steadily rising. The prospective bricklayer must be a high school graduate or the equivalent (see the "Training Directory", Ohio Employment Information Series pp. 102-107, for information about High School Equivalency examinations) and must have average or above intelligence to adequately perform all duties.

There are four possible routes by which one may enter the field, experience in the trade being basic to each:

1) Personal Experience - those who have served as trainees, assistants, hod carriers, or masons in a related field may be admitted to this occupations upon demonstrated ability to perform the work.

2) Contractors may sponsor an on-the-job training program of varying lengths for men interested in becoming bricklayer journeymen.

3) An increasing number of vocational high schools offer one (1) and two (2) year pre-vocational programs of instruction which help prospective bricklayers prepare for more informal and/or formal training.

4) The majority of prospective bricklayers learn the arts of the trade through a registered 3 to 4 year apprenticeship training program, a course which includes both classroom and on-the-job training and instruction. To be enrolled in an apprenticeship program, the applicant must be of legal Ohio working age, must pass an aptitude test, and, in some cases, must be intereviewed by an apprentice training or business representative. Classroom instruction generally consists of approximately 144 hours per year of such courses as applied mathematics, measurements and design, and blue print reading. During the 3 to 4 year apprenticeship, each candidate will complete between 6,000 and 8,000 hours of on-the-job training. Upon successful completion of the apprentice training program, apprentices are awarded a certificate of journeyman status issued by the National Bureau of Apprenticeship and Training. (For more information about general apprenticeship preparation, see pp. 1-5 of the "Training Directory", Ohio Employment Information Series).

OPPORTUNITIES FOR ADVANCEMENT The bricklayer may advance to positions as foreman, building construction superintendent and building construction estimator. Many have found success by opening their own masonry or general contracting firm or related sales business.

WORKING CONDITIONS The construction bricklayer spends most of his time out-of-doors, standing for the most part, and often working on scaffolding. He is constantly subject to falls, dust and dirt, falling objects, cuts, abrasions, and burns. New mechanical bricklaying devices have reduced much of the bricklayer's more strenuous work. New heated and enclosed "carriages", built over the areas to be bricked, have somewhat reduced the "seasonal" layoffs brought about by bad weather and generally improved the bricklayer's working conditions. Both union and non-union workers generally receive time and one-half for overtime work. Union members work an average of 40 hours per week, while non-union members' work averages 42 hours per week.

SOURCES OF ADDITIONAL INFORMATION Write or contact:

1) Occupational Outlook Handbook (1968-69 Edition), U. S. Department of Labor, Bureau of Labor Statistics.

2) U. S. Department of Labor
Bureau of Apprenticeship and Training
Mr. William Sells, State Supervisor
74 East Gay Street, Room 202
Columbus, Ohio 43215

3) Columbus Building Trades Council
23 West Second Avenue
Columbus, Ohio 43201

4) Local building contractors

5) Local offices of the Ohio State Employment Service

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145 South Front Street
Columbus, Ohio 43216

# EMPLOYMENT INFORMATION SERIES

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## CARPENTER (CONST.)

860.381

Revised
June,
1960

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Carpentry is the basic trade in almost all construction. The carpenter performs general carpentry work involved in the erecting of wooden structures for frame or combination masonry and frame buildings. This may entail building forms for concrete foundations; building scaffolds or platforms; constructing framework for all or part of the structure; laying roof and floors; hanging doors and windows; installing exterior and interior trim; and similar work involving cutting, shaping, and fastening together of wood. In rural communities the carpenter sometimes is a jack-of-all-building trades. He is expected to do both the rough and finish work on houses and other structures. In larger centers, the occupation is much more specialized, such as Rough Carpenters, Finish Carpenters, Maintenance Carpenters, and up to about 25 other specialists in this field.

OPPORTUNITIES

Current - Nationally, tens of thousands of opportunities for young men to learn the carpentry trade during the 1960's. Substantial increases in carpentry employment are expected as a result of anticipated higher levels of construction activity. Replacement needs will create thousands of job opportunities for new workers. However, on a local scale, the number of apprentices accepted tends to remain static. Up to date information should be obtained from local unions, contractors and local offices of the Ohio State Employment Service.

Trends - Technological developments will continue to increasingly offset the number and skill requirements of carpenters. Construction materials that are processed off the site and materials designed for easier, faster installation have become progressively more important. There has been a continued trend toward greater use of factory prefabrication or structural building components as well as entire structures. Nevertheless, substantial increase in employment of carpenters in construction is anticipated. Young men who obtain all-around skill training will have especially favorable long range prospects.

Seasonal factors - Normal weather conditions prevailing, carpenters should be able to work 8 to 10 months per year. Many of the better mechanics have work the year around.

FIELDS OF EMPLOYMENT - Contractors, homebuilders, self employment, maintenance work in factories, hotels, office buildings and other large establishments. Shipbuilding, mining, production of many kinds of display materials.

# CARPENTER (CONST.)

AREAS OF EMPLOYMENT - State-wide in communities of all sizes. Beginning carpenters can generally find employment in their home area or work in almost any section of the country they desire.

REMUNERATION - 1958 average hourly rates of 52 large cities---$3.46 per hour. 1960 rate in representative Ohio area--$3.61 per hour. Because of the seasonal nature of much construction work and because of time lost for other reasons, the average annual earnings of carpenters are not as high as the hourly rates would indicate.

METHOD AND REQUIREMENTS OF ENTRY - Applicants are generally required to be at least 17 years of age. A high school education or its equivalent is desirable. Good physical condition, a good sense of balance and lack of fear working on structures high off the ground are important assets. Aptitudes which the apprentice should have include manual dexterity and the ability to solve arithmetic problems quickly and accurately. Apprenticeship applicants may be required to take an aptitude test. Previous wood shop experience and training are helpful.

Training - Completion of a 4-year apprenticeship program is generally the best way to learn the trade although a substantial proportion of carpenters have learned the trade informally by working as helpers or handymen. The apprenticeship program generally consists of 8,000 hours (4 years) of on-the-job training in addition to a minimum of 576 hours of related classroom instruction.

Equipment required of the worker - Set of carpenter's tools. Generally should include the basic tools of the trade at a cost from $100 to $250. Carpenters generally wear overalls.

Union Membership - The commercial industry is highly unionized, but the home builders are not. Union information can be obtained from the United Brotherhood of Carpenters and Joiners of America, 222 E. Michigan St., Indianapolis, Indiana.

WORKING CONDITIONS AND HAZARDS - Carpentry is active and sometimes strenuous work, but exceptional physical strength is not required. Much of the work is done out of doors. Prolonged standing, as well as climbing and squatting are often necessary. Carpenters risk injuries from slips or falls, from contact with sharp or rough materials, and from the use of sharp tools and power equipment.

AVENUES OF PROMOTION - Carpenters may advance to the position of carpenter foreman and general construction foreman. Some self-employed carpenters are able to become contractors.

FOR ADDITIONAL INFORMATION - Contact: Local apprentice training service representative, local unions; local Ohio State Employment Service Office.

NOTES - (Local information, wage rates, etc.)

# EMPLOYMENT INFORMATION SERIES

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CEMENT MASON
844.884-014

## OCCUPATIONAL RELEASE

Cement Finisher,
Highways, and Streets

July,
1960

NATURE OF WORK - The principal work consists of finishing the exposed concrete surface of floors, walls, streets, and driveways, in order to make them strong and durable and, when necessary, relatively watertight. On small jobs, the cement mason pours or directs the pouring of concrete into forms, or on carefully prepared bases. Levels and settles the concrete, usually by tamping it or vibrating it with a special machine. Works surface of the concrete with a straightedge (a long flat board), a wood float (a tool shaped like a mortar board), and other hand tools in order to bring it to the desired grade (level). Also slopes and shapes the concrete, and removes all depressions and high spots. Final finishing is often delayed for several hours until the concrete has hardened sufficiently to prevent small stones from working their way up to the surface. At this state, when the concrete is still workable, the cement mason works it with a trowel to bring the concrete to the proper consistency and obtain a final finish. The final finishing may also be done by means of hand grinders or electrically operated grinders.

On most concrete building projects, finishing work generally involves hand operations. On highways and other large-scale projects, however, cement finishing machines are used extensively, but supplementary hand operations are also necessary, particularly to finish curved surfaces. Cement masons also do patching work to correct surface defects on concrete structures. Some cement masons specialize in laying a mastic base over concrete, particularly in buildings where sound-insulated or acid-resistant floors are specified. The mastic (a fine asphalt mixture) is applied hot over the concrete and then smoothed with heavy handtools. On large jobs, cement finishers work in gangs or crews. Helpers assist in performing all but the final finishing operations and laborers do the routine and heavy work.

## OPPORTUNITIES

Current - Nationally, construction expansion and openings resulting from employment needs should create hundreds of job opportunities for cement finishers annually. Locally, conditions may vary widely; up-to-date information should be obtained from unions, contractors, and Ohio State Employment Service local offices.

Trends - The relatively greater use of concrete construction in recent years is likely to continue. Recent technological developments, such as cement finishing machines, will have some adverse effect on employment prospects. However, the expected increase in the total amount of cement finishing work should be sufficiently great to result in a substantial employment increase in this relatively small building trade.

FIELDS OF EMPLOYMENT - General contractors who construct entire projects such as highways, or large industrial, commercial, and residential buildings, or cement contractors who perform subcontracting or who work on small projects such as sidewalks, driveways, and basement floors. A small number work for municipal public works departments, utilities, and manufacturing firms doing their own construction work. Some cement masons are self-employed and do small cement jobs, such as sidewalks, steps, and driveways.

AREAS OF EMPLOYMENT - Nationwide and Statewide.

REMUNERATION - 1958 survey of 52 large cities showed a minimum hourly union rate averaging $3.43. 1960 union rate in representative Ohio area--$3.45 per hour with swing-stage cement masons receiving an additional 12½¢ per hour. Seasonal factors lower average annual earnings. Premium pay is usually received for overtime, and overtime necessity frequently arises since once concrete has been poured, the work must be finished.

METHOD OF ENTRY - Training authorities recommend completion of a 3-year apprenticeship program. However, a substantial proportion of cement masons have learned the trade informally.

REQUIREMENTS OF ENTRY - Applicants generally are required to be between the ages of 18 and 25. Good physical condition and manual dexterity are important assets. High school education is not required, but education above grade school, preferably including mathematics, is needed to understand classroom instruction.

Training - The apprentice learns how to use and handle the tools, equipment, and materials of the trade. He learns finishing, layout work, and safety techniques. He also receives related classroom instruction in subjects such as applied mathematics and related sciences, blueprint reading, architectural drawing, estimating materials and costs, and local building regulations.

Union membership - A large proportion of cement masons are union members. They belong to either the Operative Plasterers' and Cement Masons' International Association of the U.S. and Canada or the Bricklayers, Masons and Plasterers International Union of America.

WORKING CONDITIONS AND HAZARDS - The work of the cement mason is active and strenuous. Since most cement finishing is done on floors or at ground level, the cement mason is required to stoop, bend, and kneel. Much of this work is done outdoors.

ADDITIONAL INFORMATION - Local contractors, unions, Ohio State Employment Service local offices.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

# CENTRAL OFFICE OPERATOR

235.862-010

Revised
October,
1960

NATURE OF WORK - Provide information or assistance to customers or other operators. Long distance operators assist callers in placing long distance calls. Make necessary connections to reach certain points and record necessary data about calls. Information operators service customers' and long distances operators' requests for telephone numbers by referring to indexes, bulletins, or files which list subscribers by name and number. Dial-service assistance operators provide special service to customers in dial offices by assisting them in placing and completing their calls. (In non-dial service areas, local operators make connections for calls by placing plugs in the proper receptacles or "jacks" on switchboards. This procedure is also used in all non-direct-distance-dialing calls.) Generally work in groups of 15 or less led by a service assistant, who co-ordinates the activities on her section of the switchboard, checks operators in and out of their positions according to schedules, and assists operators with unusual or emergency calls.

The chief operator plans and directs the activities involved in the operation of switchboards. Oversees personnel matters, such as hiring, training and transferring of employees.

OPPORTUNITIES

Current - Nationally, many opportunities for young women to enter the occupation during the 1960's, although relatively little change in the total number of telephone operators is expected. New employees will be hired primarily to fill jobs resulting from the normal rate of turnover. (The normal rate of turnover in the young female age group is high because of marriage and family responsibilities.)

Trends - Technological developments might be expected to reduce the number of operators needed in the next few years. When balanced against the needs of expanding service, however, they will probably tend to keep the number of operators employed at a fairly stable figure.

REMUNERATION - In October 1958, major telephone companies in the United States paid an average of $1.34 per hour to operator trainees. Locally, wages vary according to locations, and services required of the operator. Differentials are paid for evening and night work--with premium pay for Sunday, holiday, or overtime duty.

ENTRY METHODS AND REQUIREMENTS - Recent high school graduates, minimum age 18, are preferred. Good eyesight and good hearing, carefully checked by physical examination are required. Applicant is usually given a spelling, arithmetic, and learning ability test. Selection factors include a pleasing voice, alertness, manual dexterity, legible penmanship, a sense of teamwork for cooperating with other operators, and a stable disposition.

Training - A group of 2 or 3 new employees is generally assigned to an instructor, usually the service assistant, who teaches them on an individual basis for a period of 2 to 5 weeks. Discusses procedures, handles controlled practice calls and drills. With coaching and close supervision the trainee practices handling the most common types of calls on dummy switchboards to develop skill and speed. After learning fundamentals of common types of calls, she is assigned a regular position at the switchboard.

The service assistant continues to develop the operator's ability to handle other types of operations. This also includes training in new procedures and the use of new equipment as they are introduced.

Unions - Communications Workers of America.

WORKING CONDITIONS - The rooms where telephone operators work are generally well-lighted, well-ventilated, and many are air-conditioned. Adjustable seats are provided. Break periods are scheduled to afford relaxation from routine. Most companies provide pleasant, attractive lounges where snacks are available. Since the telephone industry gives continuous service, evening and night work, and Sunday and holiday work are necessary for a certain portion of the staff.

ADDITIONAL INFORMATION - Local telephone companies. For union information, Communication Workers of America, 1808 Adams Mill Road, Washington 9, D. C.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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## CERAMIC ENGINEER

006.081-010

Revised
December
1962

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - The ceramic engineer is concerned with producing and manufacturing products from non-metallic, inorganic materials through the application of high temperatures during their processing. These products include: glass, whitewares, ceramic coatings or "porcelain enamels", refractories, structural products, abrasives, cement, and various electrical, nuclear, and thermal insulating products. May design and supervise the construction of the plant and equipment used in the manufacture of these products; be engaged in research work to develop new or improved products and develop better manufacturing processes; be employed in administration and management, plant operations, selling, teaching, or do consulting work. Usually specializes in one or more products.

OPPORTUNITIES

Current - While many counties in Ohio have remained fairly stable in the number of personnel in the ceramic industry since 1950, others have shown a decrease in this number. Only a few counties have shown appreciable gains.

Trends - Newer areas of research, now in progress, in nuclear energy, electronics, and rocket propulsion are and will continue to provide many employment opportunities. In addition, the increasing use of the traditional ceramic products, such as whitewares, abrasives, and structural products, will require additional ceramic engineers for research and design work.

For Women - Men predominate in this field; however, opportunities do exist for women with initiative, and scientific and mathematical aptitudes.

FIELDS OF EMPLOYMENT - The majority of ceramic engineers are employed in research work and manufacturing industries. The largest number are employees in the glass, porcelain enamels, whitewares, refractories, and structural products. Others work in industries which produce or use ceramic products, such as the iron and steel, aircraft, space, automotive, and chemical industries and electrical equipment manufacturing. A very small number are employed by government agencies and educational institutions.

AREAS OF EMPLOYMENT - Ceramic engineers are employed by industrial firms throughout the United States and many foreign countries. The center of the ceramic industry on this continent is the North Eastern States, but there are sizeable concentration in the mid-west, Texas, and along the west coast. Ohio accounts for more than 20% of the National production.

REMUNERATION - In most instances the average starting salary of ceramic engineers is greater than the beginning income of other engineers. According to an engineering placement office the average monthly starting salary for 1962 graduates was $585. Some beginning engineers started at more than $600 per month. The starting salary for engineers employed by the Federal Government ranges from $5,355 to $6,345 a year depending upon the individual's college record and the amount of graduate study completed up to one full year. After 20 years of experience the median salary for ceramic engineers exceeds $18,000 a year. Many employers provide extra benefits for their employees. These may include medical insurance; group life insurance; retirement, bonus, and stock option purchase plans.

REQUIREMENTS FOR ENTRY

General - Interested in the practical application of mathematical, physical, and chemical theories; ability to think quantitatively; initiative, ingenuity, and inventiveness in overcoming technical operating problems; ability to deal with others tactfully; possess patience, cooperativeness, mature judgment, creative ability and good health.

Education - Graduation from an accredited college or university with a Bachelor's degree in Ceramic Engineering. There are nineteen (19) colleges in the United States offering courses in ceramic engineering which will lead to a Bachelor's degree. Ohio State University is the only school in Ohio that offers a program of study in this field. The five year curricula leading to a Bachelor's degree includes introductory courses in Metallurgical Engineering, Electrical Engineering, Speech, Advanced Chemistry and Physics, and Engineering Mechanics. Extensive education and training are also given in Mineralogy as well as Ceramic Engineering. In addition, an opportunity is provided for the superior student to pursue an honor program and qualify for the Master's degree as well as the Bachelor's degree in the same length of time. Those students interested in following a research-oriented, engineering-science career are encouraged to obtain a Ph. D. degree.

License, examination - All states require registration for the legal right to practice professional engineering where life, health, or property may be affected by the engineer's work. Requirements for registration as a professional engineer may be obtained from the Professional Engineers and Surveyors Registration Board. The registration fee is $15.00.

AVENUES OF PROMOTION - Promotion will depend on the initiative and ability of the worker. There is no direct or specific avenue of promotion in this field.

FOR ADDITIONAL INFORMATION - Write or contact: Engineers' Council for Professional Development, 345 East 47th Street, New York 7, New York; Professional Engineers and Surveyors Registration Board, 21 West Broad Street, Columbus 15, Ohio; Ohio State University, College of Engineering, Columbus 1, Ohio; American Ceramic Society, 4055 North High Street, Columbus 14, Ohio.

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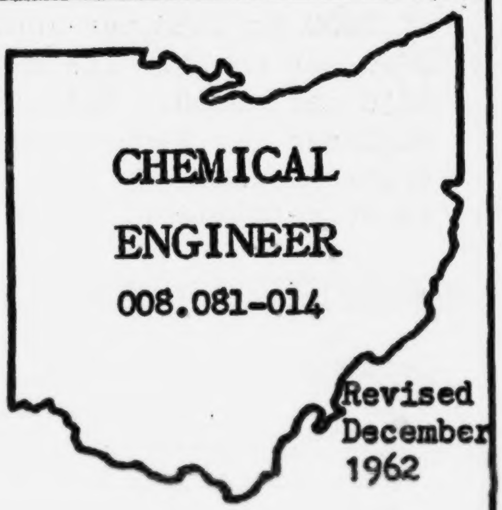

## CHEMICAL ENGINEER

008.081-014

Revised
December
1962

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - The chemical engineer is primarily concerned with the application of chemistry and engineering principles to the development, design, construction, operation, and control of processes and equipment for the economical production of chemical products on an industrial scale. Takes the ideas developed by the chemist in the laboratory and translates them into large scale commercial processes at the lowest possible cost. Determines the combination of physical and chemical operations which will result in the most efficient manufacturing process. As described by the American Institute of Chemical Engineers, "Chemical engineers are concerned with the application of the principles of the physical sciences, together with the principles of economics and human relations, to fields that pertain directly to processes and process equipment in which matter is treated to affect a change in state, energy content, or composition."

OPPORTUNITIES

Current - The employment prospects for recent graduates are very good. The rapidly increasing population, industrial growth and expansion, recent technological advancements, and continued activity in the area of research and development will create a need for chemical engineers. Currently there is a particular need for engineers with advanced degrees to teach and do research.

Trends - Employment opportunities are expected to increase during the 1960's. The long term demand is expected to be so great that it will be increasingly difficult for the supply to meet the requirements.

For Women - Less than one percent of all chemical engineers employed are women.

FIELDS OF EMPLOYMENT - Any industry processing large quantities of chemical products employs chemical engineers. Chemical-and-allied-process industries constitute the largest single group of employers of chemical engineers. The atomic-energy fields are providing a steadily increasing source of employment for this profession. Other large employers are: equipment manufacturers for the chemical and allied process industries, consulting and construction engineering firms, educational institutions, and government agencies.

AREAS OF EMPLOYMENT - Chemical engineers are employed in all states and cities, especially in or around large industrial centers. The employment area extends from Omaha, Nebraska east and Salt Lake City, Utah west.

REMUNERATION - The starting salary for chemical engineers with a Bachelor's degree and no experience is $525 to $585 per month. A Master's degree commands a salary of $600 to $650 per month. Individuals with a doctorate will start at $750 to $800 per month. The median salary for experienced chemical engineers is about $850 per month. With additional experience, education, and ability the chemical engineer may earn a salary ranging from $15,000 to $35,000 per year. Extra benefits provided by the employer may include medical insurance; group life insurance; retirement, bonus, and stock option purchase plans.

REQUIREMENTS FOR ENTRY

General - The capacity to utilize the theories of mathematics, physics, and chemistry, and the ability to think quantitatively, clearly, logically and practically; capable of written and oral expression; ability to get along with and lead others; possess initiative, ingenuity, patience, persistence, and good health.

Education - Graduation from an accredited college or university with a bachelor's degree in chemical engineering. The present trend is toward more graduate work, especially if the chemical engineer expects to do technical or research work. A Master's degree is highly desirable for those who desire to become an executive or assume the responsibilities of an administrative position. Teaching fellowships are available at most schools. The chemical engineering field has the highest percentage of advanced degrees of any engineering profession. Some of the subjects that the chemical engineering student will study in college include: algebra, plane trigonometry, analytical geometry, calculas, general chemistry, qualitative and quantitative analysis, organic and physical chemistry, chemical engineering plant design, unit operations, engineering drawing, electrical engineering, and thermo-dynamics. The American Institute of Chemical Engineers publishes annually a list of institutions in which the chemical engineering curriculum has been accredited by both the American Institute of Chemical Engineers and Engineers' Council for Professional Development. The following schools have such recognition in Ohio: Case Institute of Technology, Cleveland; Fenn College, Cleveland; Ohio State University, Columbus; University of Cincinnati and the University of Dayton.

Licenses, examination - All states require registration for the legal right to practice professional engineering where life, health, or property may be affected by the engineer's work. Requirements for registration as a professional engineer may be obtained from the Professional Engineers and Surveyors Registration Board. The registration fee is $15.00.

AVENUES OF PROMOTION - Promotion will depend entirely on the initiative and ability of the worker. There is no direct or specific avenue of promotion in this field. The individual may work in a particular branch and advance in this technical area or gain experience and training in various branches and progress in administration.

FOR ADDITIONAL INFORMATION - Write or contact Engineer's Council for Professional Development, 345 East 47th Street, New York 17, New York; American Institute of Chemical Engineers, 345 East 47th Street, New York 17, New York; Professional Engineers and Surveyors Registration Board, 21 W. Broad Street, Columbus 15, Ohio; Ohio Society of Professional Engineers, 5 East Long Street, Columbus 15, Ohio.

# EMPLOYMENT
# INFORMATION
# SERIES

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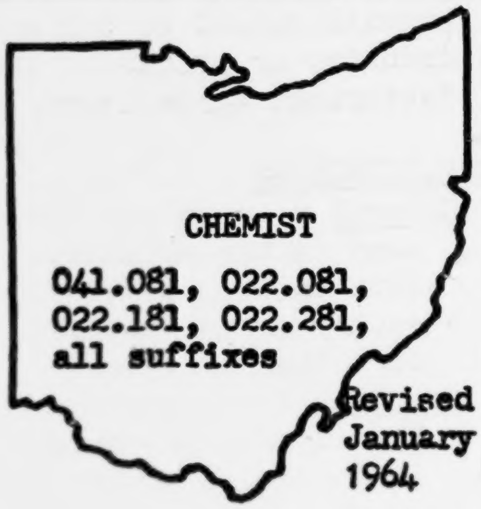
## OCCUPATIONAL RELEASE



CHEMIST

041.081, 022.081,
022.181, 022.281,
all suffixes

Revised
January
1964

NATURE OF THE WORK - The laboratory chemist studies the composition and properties of matter, the physical and chemical changes producing these substances, and the alteration of existing elements or compounds into new substances through one of several methods of transformation. Concerned with the development of methods to change matter into new, useful or improved materials; the duplication of natural substances; or the extension of scientific knowledge through basic research. There are basically five fields of specialization open to a laboratory chemist: organic chemistry, inorganic chemistry, analytical chemistry, biochemistry, and physical chemistry. The organic chemist is concerned with carbon compounds, the kind and number of atoms present in a specific compound, and the arrangement of these atoms. Will create new compounds or duplicate the composition of a natural substance. May isolate the active ingredients of a compound. Carbon compounds include such things as wood, coal, plastics, petroleum, drugs, rubber, natural and synthetic fibers and fabrics, and all other animal and vegetable tissue. The inorganic chemist deals with chemical compounds that for the most part do not contain carbon atoms. Will develop and improve metals, glass, fertilizers, ceramics, cement, propellants or rocket fuels, etc. through chemical processing. The analytical chemist analyzes materials, both quantitatively and qualitatively, determines chemical composition and structure, rate of deterioration when stored, and determines the physical and chemical properties. May design and construct the apparatus needed for analysis. The biochemist is concerned with the effects of chemicals on living organisms (plant and animal) and their tissues, and the chemical reactions that take place in plants and animals. Duties may overlap that of chemists in other fields. May specialize in one of several biochemistry fields including: chemotherapy (the treatment of diseases by chemicals), antibiotics, enzymes, cancer research, hormones, agriculture, nutrition, etc. The physical chemist applies mathematics and concepts of physics to the chemical behavior of solids, liquids, and gases. He may measure various physical properties such as heat resistance and density, analyze mathematically processes like absorption and diffusion, or investigate the effects of light, electricity, radioactivity, and other radiations on chemical reactions. The chemist in non-laboratory work may be employed in plant management in the manufacture of chemicals and chemical products; may be employed as a technical salesman responsible for advising officials of medical, industrial, and agricultural industries of the uses and advantages of new chemicals or chemical products. May work in a technical information department reviewing chemical literature and preparing reports on all material related to research projects being conducted by his company. A market research chemist will gather information from every available source regarding a product being considered for production. A chemist in the patent and legal department will act as a consultant in the preparation of patent applications. He may also choose to do private school or college teaching. Other chemists may specialize in a particular industry or product. Chemistry embraces many vocational fields including manufacturing, agriculture, medicine, textiles, atomic energy, geology, etc.

## OPPORTUNITIES

**Current** - Opportunities are unlimited. Chemistry is the largest field of employment in the sciences. There are many positions available in research, development units, teaching office and administrative jobs. A number of openings occur each year as replacements for those who die, retire, or leave the occupation for other reasons.

**Trends** - The long-term career prospects in the field of chemistry are excellent. The demand for chemists is expected to continue to grow at a fairly steady rate as a result of the expansion or institution of research and development programs in many industries; and, the anticipated enlargement of industries requiring their services. There is a particular need for chemists to fill college and university teaching positions.

**For Women** - The largest percentage of women are employed in research analysis and development work. Job horizons have widened in recent years as employers have placed more and more emphasis on qualifications, training, and experience necessary for entrance.

**FIELDS AND AREAS OF EMPLOYMENT** - The fields of employment for chemists are almost as extensive as the number of industrial fields. The largest percentage (75%) are employed in private industry, the major industrial employer being the chemical and allied products industry. Large numbers of chemists are also employed by petroleum, food, primary metals, and electrical equipment industries. Many are also employed in colleges and universities, and by federal, state, and local government. Other employers include research institutions, foundations, and other non-profit organizations and independent commercial laboratories. They work in all parts of the country, in every state and city.

**REMUNERATION** - The average beginning salary for chemists employed by private industry ranges between $525 and $600 a month. Chemists in the petroleum industry usually receive the highest beginning wages. In addition, those in administration and industrial research tend to earn more than those in analysis and testing. Earnings will vary a great deal with experience, educational attainments, and ability. In the federal government the entrance salary for a person with a bachelor's degree in chemistry and no experience is $5,540 a year. With a master's degree the beginning wage will range between $6,675 and $7,575 a year. Additional training and/or experience will create variations in the salary schedule. Chemists in state and local government and in colleges and universities generally earn less than those in private industry and federal government. Most employers offer fringe benefits.

## REQUIREMENTS FOR ENTRY

**General** - Should be intelligent, observant, alert, imaginative, painstaking, patient, objective and honest. Self confidence, open mindedness, and an analytical and searching mind, ability to work well with others, and a willingness to accept responsibility are other important personal characteristics. The power of deduction is particularly important for work in the field of research. Should be capable of expressing thoughts and iseas both clearly and logically.

**Education and Training** - The minimum entrance requirement for a chemist is a bachelor's degree in chemistry from an accredited college or university. For employment in research,teaching and the higher level positions in administrative work it is most desirable to take graduate study leading to a master of science or Ph.D. degree. The doctorate is particularly important for a career in research or college teaching. Typical courses of study leading to a B.S. degree in chemistry include: general, physical, organic, and inorganic chemistry; qualitative and quantitative analysis; physics; mathematics, including differential and integral calculus; foreign languages; English; humanities; advanced chemistry; biochemistry; etc. Many companies have special on the job training for chemistry graduates to supplement their college training. The chemistry trainees rotate through the analytical, research, and development laboratories in these programs. Other assignments may include pilot plant operation, production, quality control, testing technical service, and sales. Upon successful completion of this training the chemist is placed in the kind of work for which he is best suited. The Americal Chemical Society publishes an annual listing of institutions approved for the granting of degrees in chemistry.

Physical - Good health, hearing and eyesight, with normal depth and color perception.

Working Conditions - Are generally good for those who work indoors. Those in selling may travel a large percentage of the time. Usually work a 40 hour week and enjoy continuous employment. Laboratories are generally clean and well ventilated. Precautionary measures must be taken by those working with explosive, corrosive, or poisonous materials to prevent accidents.

VENUES OF PROMOTION - Will depend on the field of specialization, type and size of the industry, individual initiative, and leadership ability. A typical line of promotion for those in research include: lab assistant - junior chemist - senior chemist - group leader - research director.

SOURCES OF ADDITIONAL INFORMATION - It is suggested that anyone interested in a career in chemistry should make inquiries of the college of his choice and obtain information in regard to its status. Write or contact: American Chemical Society, 1155 16th Street, N.W., Washington 6, D. C.; Manufacturing Chemists Association, Inc., 1825 Connecticut Avenue, N.W., Washington 9, D. C.

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

## OCCUPATIONAL RELEASE

## CHIROPRACTOR

079.108-014

Revised
July
1960

**NATURE OF WORK** - Chiropractic is a system of treatment based on the belief that the nervous system largely determines the state of health of the human body and that any interference with this system impairs normal functions and lowers the body's resistance to diseases. Chiropractors treat their patients primarily by specific adjustments of parts of the body, especially the spinal column. Many also use such supplementary measures as diet, exercise, rest, water, light and heat. Because of the emphasis on the spine and its positions, most chiropractors use X-ray extensively in their practice to aid in locating the source of the patient's difficulty. Chiropractic as a system of healing does not include the use of drugs or surgery.

OPPORTUNITIES

Current - Greatest opportunities exist for entrants who are able to meet the highest State licensing requirements, including graduation from a course of 4000 or more hours, since 44 states have this requirement.

Trends - More and more States are raising the educational requirements for practicing chiropractic, so thorough training will become **increasingly** important, as 22 states now require two years of pre-professional college training, plus 4, 9-month academic years of chiropractic education.

For women - About 15% of the chiropractors in practice are women, and all chiropractic schools accept women as students. Opportunities should continue to be good for women to enter this field, since they are preferred by some women and children.

AREAS OF EMPLOYMENT - Opportunities for beginning chiropractors will continue to be best in those parts of the country where chiropractic is most fully accepted as a method of treatment. California, Oregon, Kansas and Colorado have 30 chiropractors per 100,000 population compared to 15 per 100,000 in the country as a whole.

REMUNERATION - As in other types of independent practice, earnings are relatively low in the beginning but rise after the first few years. Incomes vary greatly with ability, experience, income level of the community, office location and other factors. Average income above expenses was estimated at more than $10,000 per year by the National Chiropractic Association in 1960, with many incomes of between $20,000 and $25,000 annually.

## CHIROPRACTOR

REQUIREMENTS FOR ENTRY - Personal qualities considered desirable include the ability to deal with people sympathetically. Considerable dexterity with the hands is important. Unusual strength and endurance are not necessary.

Licensing - Forty-six states, Ohio included, and the District of Columbia, Puerto Rico and 6 Canadian Provinces regulate the practice of chiropractic and grant licenses to chiropractors who meet certain educational requirements and pass a State board examination. (In Ohio, the examining board is composed of both medical and chiropractic members.) As of 1960, Louisiana, Massachusetts, Mississippi and New York did not regulate the practice of chiropractic, although legislation to license chiropractic, is pending in those states.

Forty-six States now require 4 years of training in a chiropractic school following high school graduation, while 22 states require 1 or 2 years of preparatory work before chiropratic training. Ohio requires high school graduation, 2 years of college training, and 4 years, six months each year, of professional education. In 4 states, 3 years of chiropractic education is sufficient at present to qualify for a license, but licensing requirements will be raised to 4 years in all States at an early date.

Education - Approximately 2/3 of the 14 chiropractic schools in the United States restrict their teaching to manipulation and spinal adjustments. The others offer a broader curriculum including training in such subjects as chiropractic physiotherapy and clinical nutrition. In the 8 chiropractic schools accredited by the Council on Education of the National Chiropractic Association, the first 3 years of the 4-year curriculum are devoted chiefly to classroom and laboratory work in subjects such as anatomy, physiology, pathology, dissection, and biochemistry.The last year is spent in obtaining experience in the schools' clinics in the practical application of chiropractic manipulative technique.The degree of doctor of chiropractic (D.C.) is awarded by all schools upon successful completion of the required chiropractic training.

ADDITIONAL INFORMATION - Local chiropractors, National Chiropractic Association, National Building, Webster City, Iowa.

NOTES - (Local opportunities, etc.)

# EMPLOYMENT INFORMATION SERIES

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**Ohio State Employment Service**

CIVIL
ENGINEER
005.081-014

Revised
February
1963

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Civil engineers conceive, design and build such facilities as roads, railroads, harbors, buildings, waterways, bridges, dams, airfields, canals, tunnels, water and sewage systems. They measure the flow of water and plan its conservation, utilization, and control; operates in the field of surveying, with its many branches. The civil engineer designs, writes specifications, makes estimates, inspects and conducts tests on finished structures. Because of the vast size of the field, civil engineers specialize in one of the following branches: highway and railway, hydraulics, sanitary, air transport, construction, structural, surveying and mapping, irrigation and drainage, city planning, engineering mechanics, soil mechanics and foundations, power, pipeline, waterways and harbors. Within each of the above branches, civil engineers may specialize in investigation, planning and design; construction or installation; manufacturing of equipment and plant operation; administration or management of large industrial or public structures. The engineer may also choose to enter consulting work; teach at the university level; do research and development work on new materials, equipment and methods of construction; sales; or technical writing or editing.

OPPORTUNITIES

Current - Currently there is a shortage of civil engineers in Ohio. This field is comprised of many workers who are in the upper age bracket, thus many vacancies occur as a result of retirement and death. There is an annual increase in the number of openings available to graduating engineers.

Trends - This field is one of the two largest of the many branches of engineering and the estimates for the future is one of increasing need and growing shortage. The new field of radiological control at atomic energy installations as well as aircraft and guided missile industries will increase the need for civil engineers. The growth in population and rapid community expansion will increase construction activity for many years. This will include housing, industrial building, and highway construction.

For Women - Only 8% of all women engineers have specialized in civil engineering. The standards for employing women engineers may be more exacting than for men, although many individual firms are willing to hire qualified women engineers.

FIELDS OF EMPLOYMENT - About one half of all civil engineers are employed by Federal, State, or local government agencies, primarily for the purpose of construction or map making. The second largest group are in construction firms. Others are employed by manufacturing concerns or transportation companies.

# CIVIL ENGINEER

**AREA OF EMPLOYMENT** - Civil engineers are employed in all parts of the country, in every state and city. The greatest numbers are located in or near industrial and commercial centers. They are sometimes stationed in remote areas of the United States or in foreign countries.

**REMUNERATION** - Entry wages range from about $500 to $600 per month for the first year of employment. An experienced engineer's salary will average about $1000 per month. Earnings above or below this figure will depend upon such factors as experience, education, type of work, and individual ability.

**REQUIREMENTS FOR ENTRY**

**General** - An above average aptitude for mathematics, physical sciences, and mechanics. Possess initiative, integrity, creativity, and good judgment. Have the ability to work with and direct the work of others, and a willingness to accept responsibility.

**Education** - Prerequisites include graduation from high school with as many physical science and mathematics courses as possible. In the majority of instances the minimum educational requirement is graduation from an accredited college with a Bachelor of Science degree in civil engineering. Some firms will hire men for civil engineering jobs with our college degrees if they have the appropriate work experience. There are ten colleges in Ohio offering courses in civil engineering, which are recognized by the State Board of Registration for Professional Engineers and Surveyors. The recognized schools are: Case Institute of Technology, Fenn College, Ohio Northern University, Ohio State University, Ohio University, University of Akron, University of Cincinnati, University of Dayton, University of Toledo, and Youngstown University. Basic educational training is given in college mathematics, physical science, surveying, and mechanics. Advanced courses include hydraulics, geology, structural design, highway engineering, photogrammetry, sanitary engineering, and public health and courses in the field of specialization.

**Examination** - The civil engineer who works for the Government will be required to pass a Civil Service examination.

**LICENSE AND REGISTRATION** - Registration is required by most of the States for the legal right to practice professional engineering where public health, life, and/or property may be affected by the engineer's work. Requirement for registration and the cost of licensure in Ohio may be obtained from the Professional Engineers and Surveyors Board, 21 West Broad Street, Columbus 15, Ohio.

**AVENUES OF PROMOTION** - May become a Chief Engineer, superintendent, consulting engineer, city manager, or head of an engineering or contracting company. Promotion is usually dependent upon personal initiative, ability, and experience.

**FOR ADDITIONAL INFORMATION** - Write or contact: American Society of Civil Engineers, 345 East 47th Street, New York 17, N. Y.; Ohio Society of Professional Engineers, 5 East Long Street, Columbus 15, Ohio; Professional Engineers and Surveyors Board, Wyandotte Blvd., Columbus 15, Ohio.

# Employment Information Series

Written
April - 1966

## CLERK, GENERAL OFFICE
219.388 (1-05.01)

NATURE OF THE WORK The duties of the general office clerk depend upon the size and type of office in which she works. In a large corporation she may perform a single operation, such as filing; in a small agency she may be assigned a variety of clerical tasks.

Generally speaking then, the clerk may have one or more of the following duties: files records, correspondence, and office forms according to individual office procedures and subsequently draws this media from the files as it may be needed; enters receipts and expenditures in bookkeeping journals and ledgers; opens, reads, and sorts incoming mail and prepares outgoing correspondence; makes up and types requisitions for supplies and distributes received supplies to various employees; greets callers, arranges appointments, and refers callers to proper personnel.

The clerk may also be required to use the telephone to accept orders, send or take inter-office messages, or give out information that is requested from associates, clients, or salesmen. In some offices she may collate booklets and pamphlets; maintain such records as personnel and time sheets; type reports from rough drafts; duplicate various materials; and stuff letters for mailing.

In the course of her work, the clerk may use the typewriter, adding and calculating machines, duplicator, postage meter and scale, and mailing machine.

OPPORTUNITIES

Current Many thousands of openings are expected to occur in the United States during the remainder of the 1960's. The majority of workers in this field are young women who leave their jobs after several years to marry or raise children; this results in an extremely high turnover. Many new positions are also created as business grows. The best opportunities will be in banks and insurance companies, both of which are expected to continue their present rapid expansion.

Trends In the long run, the increasing use of office data-processing machines (electronic computers) will somewhat reduce the demand for clerks. This trend specifically will affect those employed in routine, repetitive tasks, such as sorting bank checks and billing customers. Moreover, this trend will be felt chiefly in sizable corporations and large metropolitan areas.

Taking into account both the anticipated growth of business and the utilization of automatic equipment, it appears likely that clerical jobs will still continue to increase — though at a slower rate than during the past several decades. And the best opportunities will be for those who have the education and ability to be advanced beyond simple, routine tasks.

Men The majority of general office clerks in the United States are women. Men employed in this field may receive higher salaries than women for the same work.

FIELDS OF EMPLOYMENT The greatest concentration of jobs in the United States is in large metropolitan areas where central offices of insurance and real estate companies, banks, and corporations are located or where large government offices are found. Large numbers of workers are also employed by wholesale and retail establishments; public utilities; schools and colleges; and manufacturing firms.

AREAS OF EMPLOYMENT In 1960, there were approximately 99,130 women and 71,646 men in Ohio employed in clerical jobs. The majority of these worked in large metropolitan areas.

REMUNERATION Minimum salaries for inexperienced clerks in Ohio range between $60 and $70 a week. Experienced workers may expect between $70 and $100 a week. Male clerks may earn from $1 to $21 more a week. Highest salaries are paid in public utilities and manufacturing firms.

Usual benefits include one or two weeks' paid vacation after a year of service, life and medical insurance plans, and retirement pensions.

## REQUIREMENTS FOR ENTRY

Selection Factors competence in arithmetic, spelling, grammar; good reading comprehension; accuracy; neatness; ability to perform everyday tasks in continuous and efficient manner; faculty for working well and cooperating with others; good general health; finger dexterity; good eye-hand coordination

Education and Training High school graduation is becoming the minimum education requirement for most entry jobs in this field. A high school curriculum should include typing, business arithmetic, introduction to business, and general academic courses.

Practically all beginning clerical workers receive some sort of on-the-job training, for example, instruction in the company's system of record-keeping or the operation of adding and duplicating machines.

Many employers prefer to hire individuals who have acquired some advanced business training behond high school. Training opportunities exist in private business schools and in public training courses for clerk, general office. A list of business schools may be obtained from The United Business Schools Association. For information on public training, write to the Bureau of Unemployment Compensation, Manpower Development Section, 145 South Front Street, Columbus, Ohio 43216.

A high school student can measure her interest and aptitude for this occupation by obtaining a summer or part-time clerical job in an office. In school, the student may seek experience by doing clerical work in the school office or by serving as secretary or treasurer of extracurricular clubs and committees.

Union Membership Relatively few clerks have membership in unions. The largest union which represents these workers is the Office Employees International Union, 1012 Fourteenth Street, N.W., Washington 5, D.C.

WORKING CONDITIONS The majority of clerks work an eight-hour day and a 40-hour week. Those employed in finance, insurance, and real estate offices may work 35 or 37½ hours a week.

Office surroundings are generally clean, comfortable, well-ventilated, and well-lighted; equipment is modern. In some older establishments the surroundings may not be as desirable.

Most clerks sit for long periods of time. Some jobs, however, require considerable standing, walking, stooping, and reaching. Since this work is done in contact with a number of other office personnel, the noise from business machines and talking may be disturbing.

PROMOTION POSSIBILITIES Advancement depends both upon the employing firm and the education, experience, ability, and personal qualities of the individual. Promotions may take the form of an appointment to a single task or responsibility, a raise in pay, or an assignment to an assistantship or specialized clerical duties. Possible promotions include these positions: billing or payroll clerk; assistant bookkeeper; receptionist; credit clerk; telephone operator; cashier; stenographer, typist, or secretary; statistical clerk; office-machine operator; and supervisor of clerks. Advancement opportunities are limited for workers without a good educational background.

PLACEMENT SERVICES Contact the local public employment service office; personnel offices of retail and wholesale establishments, insurance and utility companies, banks, real estate firms, and manufacturing organizations; commercial employment agencies.

Larger firms are more likely to hire individuals without experienced office skills.

SOURCES OF ADDITIONAL INFORMATION The United Business Schools Association, 1101 Seventeenth Street, N.W., Washington, D.C. 20036; "Can I Be an Office Worker?", General Motors Corporation, Public Relations Staff, General Motors Building, Detroit 3, Michigan; "Office Style Typing," Ditto, Incorporated, 6800 North McCormick Road, Chicago, Illinois 60645.

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Bureau of Unemployment Compensation

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Written: January 1968

# COMPUTER OPERATING PERSONNEL

Systems Analyst
012.168
Digital Computer Operator
213.382
Tape Librarian
223.387

NATURE OF THE WORK Today the computer is used to make clerical and research work more efficient. There are three basic stages to the complete computer process: the input stage, the processing, and the output stage. A systems analyst (D.O.T. - 012.168) and a programmer (D.O.T. - 020.188) prepare the material to be processed (see occupational brief "Programmer, Business"). A digital computer (or console) operator works with programmers and systems analysts to test new programs, develop improved routines, and to solve operating problems.

A digital computer operator (D.O.T. - 213.382), under general supervision, operates the central control panel of an electronic digital computer. He reviews computer programs and instruction sheets to determine equipment set-ups for optimum computer efficiency. He selects tape reels and card units for scheduled program runs. The console operator also investigates, diagnoses, and corrects machine malfunctions within the limitations of his authority and knowledge.

The tape librarian (D.O.T. - 223.387) maintains the tape files by recording the material on tape, assigning codes to each tape, preparing reference files, and storing materials.

EMPLOYMENT OUTLOOK The use of electronic data processing increases almost daily with the advent of new computer systems. Most persons entering these occupations are twenty to twenty-five years of age; few, including the director of a computer installation, are over the age of forty-five. Although some women are employed in this field, particularly as tape librarians, it is staffed largely by young men.

FIELDS OF EMPLOYMENT Computer operating personnel may be employed by governmental agencies, business firms, educational organizations and institutions, financial institutions, and manufacturing concerns.

REMUNERATION Salaries vary with the complexity of the work performed by the operator. The average salary of the console operator runs between $84 and $95 per week while that of an experienced console operator ranges from $135 to $180 per week. The salary of the tape librarian is approximately $90 to $95 per week.

## REQUIREMENTS FOR ENTRY

General A conscientious and reliable individual who learns quickly, possesses initiative, some creativity, and good judgment is sought. He should express himself well, accept responsibility, and be able to understand, interpret, and follow instructions carefully. The ability to think quickly and logically, work with extreme accuracy, and remain calm under pressure is necessary.

Beginners are seldom expected to have had specific training as operators. Many employers will provide, or will prefer to provide, basic training for new employees. Console operators may attend classes to learn how to mount tapes, operate the console, and to make basic machine adjustments and repairs. This training is supplemented by further on-the-job training.

Education Educational requirements vary among employers. Private employers usually require at least a high school education. Some college training may be preferred for console operators. Many employers screen applicants by tests designed to measure the applicant's aptitude.

WORKING CONDITIONS Computer personnel work the same number of hours per week and are granted the same holidays, vacations, and other company benefits as other office workers receive. Work usually is available on a two- or a three-shift basis. The operator's work area is usually air-conditioned, humidity-controlled, dust-free, and well lighted.

AVENUES FOR PROMOTION One may advance to senior computer operator, supervisor of computer operations, or programmer. Advancements depend upon one's initiative, experience, and general understanding of computer operations.

SOURCES OF ADDITIONAL INFORMATION Write: Data Processing Management Association, 524 Busse Highway, Park Ridge, Illinois, 60068.

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Ohio Bureau of Employment Services
145 South Front Street
Columbus, Ohio 43216

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed
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CONSTRUCTION INDUSTRY

January
1960

## INDUSTRIAL RELEASE

NATURE OF THE WORK - More than 3 million skilled workers were employed in the construction industry in 1959--one-third of the total of the nation's skilled labor force. This industry includes the design, erection, maintenance, alteration and modernization of houses, buildings, factories, dams, bridges, locks, highways, sewer systems, pipelines, elevators, pumps, heating and ventilating equipment, etc.

OCCUPATIONS IN THE INDUSTRY - The building trades consist primarily of journeymen (skilled workers), assisted by apprentices, helpers and laborers. Journeymen are grouped into three broad classifications--structural, finishing and mechanical. Some craftsmen such as carpenters may do either or both structural and finishing work.

Structural - Carpenters, bricklayers, stonemasons, cement or concrete masons, structural iron workers, riggers, ornamental iron workers, reinforcing iron workers (rodmen), boilermakers and operating engineers.

Finishing - Lathers (wood-metal), plasterers, tile setters, marble setters, terrazzo workers, painters, paper hangers, soft-floor layers, glaziers, roofers and asbestos workers.

Mechanical - Plumbers, pipefitters, millwrights, construction electricians, sheet-metal workers, elevator constructors.

OPPORTUNITIES

Current - Construction employment is largely controlled by the weather, especially in the colder months. Seasonal fluctuations and changes from one job to another are additional factors. Construction planning aims at maximum use of equipment and labor to maintain a high level of income and completed units.New materials and pre-assembled or unit construction have facilitated final installation and reduced construction time.

Trends - Construction programs of all types show many units and facilities completed in recent years and this high level is expected to continue.Modernization and face-lifting of downtown city sections is in process. Ohio was one of nine states that together employed 50% of skilled trades construction workers in 1956-57. Apprentices in Ohio numbered 7,336 in 1956-57, the 4th largest group in the country. More than 160,000 construction workers were employed in Ohio in 1958. Employment growth on a national scale will be most rapid for brick layers, cement and concrete masons, operating engineers, sheet metal workers, plumbers and pipefitters and electricians and carpenters. Less rapid for paperhangers, painters, stonemasons, marble setters and building laborers.

FIELDS OF EMPLOYMENT - Three main divisions in Ohio: (1) General and specialized contractors; (2) Businesses and government agencies doing their own new construction and maintenance construction; (3) Self-employment.

AREAS OF EMPLOYMENT - State-wide.See craftsmen's unions for opportunities.

REQUIREMENTS FOR ENTRY - Apprentices generally required to be between the ages of 17 and 25, and in good physical condition. High school education or its equivalent with course work in mathematics or science is desirable. Vocational aptitude tests may be given. Some skilled building trades require considerable manual dexterity, mechanical aptitude, color discrimination, and an eye for quickly determining proper alinement of materials.

Training - Formal apprenticeship agreements generally stipulate a training period of 3 - 5 years of relatively continous employment and training supplemented by at least 144 hours of related classroom instruction. Management-labor schools under the supervision of the U. S. Dept. of Labor, Bureau of Apprenticeship Training, have programs in many cities. Trade skills acquired in the U.S. Armed Forces or trade schools may entitle the apprentice to a higher beginning rate of pay.

AVENUES FOR PROMOTION - Experience may lead to a job as foreman, superintendent, contractor's estimator or trade school instructor.Some journeymen set up a contracting business of their own.

WAGE RATES - Hourly earnings considerably higher than the average for factory workers. But, construction workers average 2 or more hours less work per week than factory workers on an annual basis.

Journeymen - All types averaged $3.71 an hour as of July 1, 1959. Helpers rates averaged $2.74 an hour. (Union rates quoted by U. S. Department of Labor.)

Union hourly rates for representative Ohio area:

Asbestos workers - $3.76 - boilermakers, $3.75 - bricklayers, $4.06 - carpenters, $3.61 - cement or concrete masons, $3.45 - electricians, $3.80 - elevator workers, $3.73 - glaziers, $3.07 - iron workers, $3.75 - operating engineers, (crane) $3.70 (hoist) $3.80 - painters, (brush) $3.30, (spray-roller) $3.60 - paper hangers, $3.20 - plasterers and lathers(wood and metal), $3.70 - plumbers and steamfitters, $3.75 - roofers, $3.63 - sheet metal workers, $3.62 - tile setters, $3.50.

UNION REPRESENTATION - A.F. of L.-C.I.O.

WORKING CONDITIONS - The construction worker works both indoors and outdoors; in mines, tunnels, caissons (chambers for underwater construction,) and on high buildings. Some jobs at distance from workers home.

Hazards - Dust, dirt, noise, falling materials (in spite of high safety requirements) and working on scaffolds. Night shift work increases the possibility of hazards.

Physical requirements - Prolonged standing, bending, stooping, working in cramped quarters, and on high elevations frequently necessary.

ADDITIONAL INFORMATION - Local libraries, construction magazines, news weeklies, labor magazines. Local builders groups or contractors, suppliers and public offices handling construction programs (city, state and national).

NOTES - (Local unions, apprenticeship programs, etc.)

# Employment Information Series

Written
January - 1966

## COOK, COMBINATION

313.381-018

NATURE OF THE WORK The cook, combination is employed in small and moderately priced eating places. His duties include preparing, seasoning, and cooking meat, fish, fowl, vegetables, soups, and a variety of desserts--all in small or large quantities. He may also prepare salads, gravies, sauces, cold meats, sandwiches, and beverages. These various items on the menu are cooked according to standard recipes of the establishment and are portioned as directed by the management. The cook may be responsible for planning and pricing menus, purchasing food and supplies, and supervising any other kitchen workers.

Usually the cook has one or two helpers who wash utensils, get the food ready for cooking, dispose of garbage and trash, and otherwise keep the kitchen clean and sanitary. In small luncheonettes and short-order diners, however, where the cook may be the only kitchen worker, he is required to perform these duties. Moreover, he may even serve customers and act as cashier.

In larger and more exclusive establishments there are several special cooks on the kitchen staff; each one is responsible for a particular kind of food or a particular method of preparation. A staff such as this includes: broiler cook, vegetable cook, fry cook, breakfast cook, short-order cook, dessert cook, fish cook, pastry cook, and garde manger (who specializes in cold meat dishes). The roundsman (relief cook) substitutes for any of the above cooking positions. The chief or executive chef supervises the entire staff and kitchen operation.

### OPPORTUNITIES

Current According to the March 1963 "Manpower Report to the President" there were over 550,000 persons in the United States who considered themselves career cooks. Resignations, retirements, and deaths in this large group create thousands of new job openings each year.

Trends The demand for well-qualified cooks is expected to continue throughout the 1960's. Due to high turnover, the greatest number of openings will be in medium and low-price restaurants. Hospitals, schools, factories, and department stores also offer good job possibilities.

Women A little more than half the total number of professional cooks are women. The majority of these are employed in small restaurants and the kitchens of institutions such as hospitals and schools.

FIELDS OF EMPLOYMENT Cooks are employed in restaurants; hotels; institutions, such as hospitals and schools; coffee and tea shops; diners; industrial, business, and government cafeterias; railroad, steamship, and airline companies; camps; and resorts.

AREAS OF EMPLOYMENT In 1963 there were approximately 30,000 cooks employed in Ohio. The greatest concentrations were in Cleveland, Cincinnati, Columbus, Dayton, Toledo, Akron, and Canton (in that order).

REMUNERATION The type and geographic location of the eating place determines the wages paid. For example, short-order luncheonettes of small town diners pay considerably less than hotels and restaurants in metropolitan areas. Generally speaking, wages for experienced, versatile cooks range from $75 to $150 a week. Women's salaries are somewhat lower.

Cooks usually receive free or low-cost meals while on the job and often are provided with the necessary uniforms. Paid vacations after a year of service are common. Workers are also protected by company insurance and pension plans.

## REQUIREMENTS FOR ENTRY

Selection Factors physical stamina, ability to read and write and follow oral and written directions, habits of cleanliness and neatness, manual dexterity, basic interest in food and its preparation, creative talent in preparing dishes, keen senses of smell and taste, ability to work under pressure during peak period Most states require cooks to obtain a health certificate which attests to freedom from communicable diseases.

To become a chef or executive chef, one must also have managerial and business skills and a thorough knowledge of all types of food stuffs and kitchen equipment.

Education and Training Employers prefer high school graduates, although there are no specific formal schooling requirements. There are, however, three methods of acquiring training for this field: apprenticeship, technical school education, and on-the-job training. An apprenticeship usually lasts three years. Formal programs are available only in large hotels and restaurants in metropolitan areas. To qualify, one generally must be: male, at least 21 years old, a high school graduate or equivalent, and within commuting distance of the job or able to provide transportation to the job. Additional information may be obtained from the local representative of the Bureau of Apprenticeship Training.

Enrolling in a technical school curriculum is the second method of obtaining training. Applicants for most technical schools must be at least 16 years old and have completed grade eight or nine (high school graduates are given preference). For further information on schools offering cooking courses, write to The State Department of Education, Division of Vocational Education, Ohio Departments Building, South Front Street, Columbus, Ohio 43216. Public training courses are periodically held for cook, combination throughout the state. Details may be obtained from the Ohio State Employment Service, Manpower Development Section, 145 South Front Street, Columbus, Ohio 43216.

Informal on-the-job training is the third method of entry. An individual usually begins as a kitchen helper and is gradually assigned various and more responsible cooking duties. The intensity and length of the program depends on the variable amount of time that the head cook or chef can devote to the individual; this may mean that the trainee will have to change jobs from one eating place to another to acquire the necessary all-round knowledge.

Students, who are interested in entering this field, may want to investigate it further by securing summer or part-time employment as kitchen helpers in resort hotel kitchens, soda fountains, large restaurants, and hospitals. Jobs in grocery stores or meat markets offer experience in food handling and meat cutting.

Union Membership The percentage of unionized restaurants is very small;however, the principal union which organizes chefs, cooks, and other kitchen personnel is the Hotel and Restaurant Employees and Bartenders International Union.

WORKING CONDITIONS Depending on the locality and type of eating place, the workweek varies from 40 to 48 hours. Some places operate on a split-shift or two-shift basis; some are open on weekends and holidays. This means that the cook may either be required to do night work or to take his day or days off during the week or slow periods.

Kitchens in large hotels and restaurants are air-conditioned and equipped with modern appliances; many of the smaller eating places are not. Risk of injury from sharp knives, boiling foods, hot pans, hot grease, and wet floors is always present.

Cooks stand most of the time and may also do considerable lifting, walking, reaching, stooping, and carrying. They are subject to food odors and fumes. At meal times they may work under great pressure.

PROMOTION POSSIBILITIES Individuals usually begin as kitchen helpers or apprentices. The line of advancement is to cook's helper, to cook, and to head cook or chef. Most establishments, however, do not have regular promotion policies or salary increases, so it is often necessary for an individual to change jobs in order to advance. Experienced cooks and chefs with business ability and the necessary capital may open their own eating establishments.

PLACEMENT SERVICES Contact the local public employment service office; personnel offices of hotels, restaurants, cafeterias, hospitals, schools, and other eating places; local restaurant association; placement bureaus of trade and vocational schools; local food workers' union; and private employment agencies.

SOURCES OF ADDITIONAL INFORMATION National Restaurant Association, 1530 North Lake Shore Drive, Chicago, Illinois 60610; American Hotel Association, 221 West 57th Street, New York, New York; Hotel and Restaurant Employees and Bartenders International Union, 6 East Fourth Street, Cincinnati 2, Ohio; Council on Hotel, Restaurant and Institutional Education, Statler Hall, Cornell University, Ithaca, New York; Ohio State Restaurant Association, 40 South Third Street, Columbus, Ohio 43215.

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# EMPLOYMENT INFORMATION SERIES

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## DAIRY TECHNOLOGIST

040.081-030

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February
1960

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Concerned with the production, manufacturing, and distribution of dairy products, such as; milk, cheese, butter, ice cream, condensed milk, evaporated milk and dried milk, Usually has the responsibility of training, developing and supervising personnel. Supervises all phases and operations which involve procurement, processing, and manufacture of these products, as for example, milk pasteurizing, cooling, and bottling; ice cream mix preparation, freezing, flavoring, and packaging; cheese and butter making. Supervises all testing and research done in laboratories. In a large plant, usually specializes in one product or in one functional activity. In a small plant, may be responsible for the processing of several or all phases of dairy products or for all types of functional activity. Creates and tests new formulas for the production of dairy products. May be employed on sales staff or as a field man to contact dairy farmers in an advisory capacity. May work entirely in the field of research for the dairy industry.

OPPORTUNITIES

Current - There is a large demand for trained dairy technologists, far in excess of the supply. Rapid expansion in the field and advances in science and technology have increased the need for better qualified personnel in all phases of the dairy industry. Persons with specialized training in engineering, business, science, or general agriculture, plus dairy technology are scarce and in great demand.

Trends - Although agricultural schools are endeavoring to educate sufficient men to alleviate the shortage, there will always be a need for well qualified dairy technologists because of the nature of the dairy industry and the breadth of the field.

For women - Women are not encouraged to enter training in dairy technology as there is very little opportunity for them in this field, with the exception of laboratory work.

Fields of employment - The main field of employment is in the dairy products industry where the dairy technologist will be employed in field work, plant production, laboratory and research, sales, and dairy engineering. Other fields of employment include research and inspection with municipal, state and federal governments, teaching in colleges and universities and sales for the dairy equipment and supply industry.

REMUNERATION

Probable entry wage - $5000 - $6000 per year is the wage range in Ohio for the average employee. Executive positions will pay from $15,000 to over $30,000 per year. One dairy reports these figures are high.

METHODS AND REQUIREMENTS FOR ENTRY - Graduation from a four-year college course in dairy technology is usually required for entrance into this field.

Training - Four years of college study with fundamental courses in applied dairy technology, mathematics, bacteriology, chemistry, physics, engineering, and business. Will also receive a broad training in cultural subjects. This curriculum is made sufficiently flexible so that the student may emphasize engineering, business, science, or general agriculture along with his dairy technology major. Two summers of work spent in a commercial plant are required before graduation. The student will be graduated with a Bachelor of Science Degree in Dairy Technology.

School location in Ohio - Ohio State University in Columbus has the only approved curriculum for Dairy Technology in Ohio. A limited number of scholarships are available for high school students living in certain areas of the State. Application must be made to the Department of Dairy Technology at Ohio State University and all interested persons must pass an examination to be eligible for a scholarship.

Selection factors - Must have ability to handle and get along with others; ability to plan and organize work; initiative; neatness and cleanliness; must be able to assume responsibility and be trustworthy; must have pleasant and pleasing personality. For working directly in dairy plant should have good understanding of science and processing procedures. For sales work should be well-trained in sales, promotional and advertising work.

Licenses, examinations - No license required to do this work except for milk weighers and testers. To be employed by municipal, state and federal government, often are required to pass a civil service examination.

WORKING CONDITIONS - Vary widely according to type of duties. If in plant production work, the technologist is subject to variations in temperature and dampness. In larger plants, the work will be on a regular shift but hours will vary depending upon the responsibilities of the worker.The production worker in the plant will work indoors in clean and pleasant surroundings and must be capable of doing considerable traveling.

AVENUES OF PROMOTION

Workers usually start out in this occupation as - Supervisory assistant in any or all of the various departments of the dairy plant for the purpose of gaining a background of practical experience. With specialized training backgound, may enter directly into fields of laboratory control, sales, engineering, and research. In supply sales, may begin as an apprentice salesman.

Workers may be promoted from these jobs to - Superintendent, production manager and other executive positions in plant management, laboratory supervisor of quality control and laboratory director in research. In sales, may become sales manager. Advancement to position of general manager requires a broad knowledge of all operations. With advanced degrees, may go into college and university teaching. May be a district sales agent or sales manager for a dairy equipment or supply company.

Usual promotion basis - Experience, and advanced training, supervisory ability.

FOR ADDITIONAL INFORMATION - Write or contact any dairy products manufacturing company; Department of Dairy Technology, Ohio State University, Columbus. Read: "Your Career in the Dairy Industry" and "The Dairy Industry" available at the Ohio State University.

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

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# DENTAL ASSISTANT
079.378

NATURE OF THE WORK A trained dental assistant assists the dentist at chairside, prepares patients for treatment, sets out and sterilizes instruments, and during treatment hands the required instruments to the dentist, mixes filling materials, and assists in taking and mounting x-rays. Her clerical duties usually include acting as receptionist, scheduling appointments, bookkeeping, and record keeping. The job of dental assistant should not be confused with that of the dental hygienist for which a license and additional study are required.

EMPLOYMENT OUTLOOK The demand for trained dental assistants is greater than the supply. The continuing shortage of dentists and steadily increasing demands for dental service are boosting the demand for assistants to relieve dentists of routine duties. This occupation has more than doubled in the last 10 years and this trend is expected to continue as more dental colleges are teaching their students how to use trained assistants effectively. Dentists with an established practice are discovering the economic advantages of employing a trained assistant.

FIELDS OF EMPLOYMENT Dental assistants are employed in dental offices, clinics, public health services, some government agencies, private concerns, and military installations.

REMUNERATION Amount of training, length of practical experience, specific job duties and geographic location are the factors upon which the salary is generally based. Beginners involved in on-the-job training receive about $250 per month. Experienced assistants or those with training can earn up to $450 per month.

## REQUIREMENTS FOR ENTRY

General-Educational A pleasant personality is essential in dealing with the dentist's patients. The assistant should be neat, in good health, clean, poised and self-controlled. Ability to work quickly and deftly with her hands is extremely important for effective performance. High school graduation is a necessity. Courses in mathematics, bookkeeping, typing, biology and chemistry will be particularly helpful.

Training Although some dentists will train a beginner in this field, most dentists prefer hiring trained personnel. Many dental colleges, junior colleges, and vocational schools offer courses in dental assisting; their number is expected to increase rapidly over the next several years. Junior colleges offer two year courses giving the prospective assistant both a broad academic foundation as well as specialized training in dental assisting. Some of these courses lead to an associate arts degree. Courses of one year or less concentrate on the technical aspects of dental assisting and are offered by business schools, some junior colleges, and vocational schools.

Certification There are no licensing requirements for dental assistants. The American Dental Assistants Association grants a certificate of "Certified Dental Assistant" to those who have fulfilled experience and course requirements, are members of the association, and pass the examination administered by the association.

WORKING CONDITIONS The dental assistant works in a pleasant office atmosphere, where both the reception room and the treatment area are well lighted, ventilated and adequate for the work to be done. She works with adults and children and follows the dentist's orders and procedures closely. There is generally work with chemicals and x-ray equipment; care must be taken to prevent accidents. There may be evening work, although an assistant generally works 40 hours per week.

AVENUES OF PROMOTION Promotion as a dental assistant is largely through salary increases and merit increases due to competence in technical work or special attention to financial matters of collection and handling accounts. A girl with good supervisory ability may become an office manager in a large clinic.

SOURCES OF ADDITIONAL INFORMATION Write or contact: American Dental Assistant's Association, 211 East Chicago Avenue, Chicago, Illinois, 60611; local dental societies, junior colleges, and local Ohio State Employment Service Offices.

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# Employment Information Series

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## DENTAL HYGIENIST
079.368

NATURE OF THE WORK The dental hygienist is a specially trained worker whose duty is to expand popular health education and to give dental service, (oral prophylaxis - remove (tartar) calcareous deposits, stains from the teeth, and polish the teeth.) The hygienist must work under the direct supervision of a licensed dentist, and must have passed the state dental hygienist's board examination in the state in which she wishes to be licensed. She cleans teeth, and gives health advice as to needed dental care, diet correction and other oral hygiene guidance. She may take dental x-rays and process them. She may keep a regular record on each person treated, noting all defects and referring the card to the dentist who supervised her work. In schools as a teacher, she gives classroom talks on the care of the teeth or teaches dental hygiene. She serves groups of schools, using posters, slides, motion pictures and displays to provide adequate health education and works closely with teachers and other health workers. In a dentist's office she may also be the receptionist and assist the dentist in his work, when not busy with dental hygiene assignments.

EMPLOYMENT OUTLOOK The demand for qualified dental hygienists exceeds the supply and is expected to continue to grow as a result of the expanding population and the growing awareness of the importance of regular dental care. Increased participation in dental insurance programs and more group practice among dentists will also result in new jobs for dental hygienists.

FIELDS OF EMPLOYMENT Dental hygienists find employment in dentist's offices, public and private schools, national, state and county health units, private and industrial clinics, college health services, hospitals and sanatoriums, dental and dental hygiene schools, research, state institutions and the Armed Forces.

REMUNERATION Salaries compare with other allied fields and range from $4000 to more than $7000 annually.

### REQUIREMENTS FOR ENTRY

General: The age for entering varies from 18-21 years, depending on the state license laws. In Ohio, the age is 18. The prospective student should have a sincere interest in working with people, be neat and poised, possess manual dexterity and be attentive to detail. Good health and normal eyesight are important. It is also necessary that the dental hygienist have good teeth.

Training: High school graduation with a college preparatory course including math and science is required by some schools and preferred by all. A dental hygiene course lasts two years but some schools require that the applicant have completed one or two years of college work before entrance and others require some prior experience in a dental office. Many universities offer a combined four year program leading to a B.S. degree. All dental hygiene students are required to take a Dental Hygiene Aptitude Test. (For information, write to Entrance Board, 100 Administration Building, Ohio State University or American Dental Hygiene Association).

WORKING CONDITIONS The dental hygienist generally works inside, in a well-lighted room. The work is confining, and may be done while standing. She generally works regular hours and is in contact with children and adults. She may travel between schools or between communities in county work. In hospitals, she works between rooms and laboratory.

LICENSES, ASSOCIATIONS In Ohio, the Dental Hygienist must be licensed by law. The requirements are: 18 years of age, a graduate of high school and of a two year program in an accredited school of dental hygiene. There is a $25.00 fee for the written and practical examination given by the State Dental Board. An annual registration fee of $3.00 is also required. The Dental Hygienists have local and state, as well as a national organization.

AVENUES OF PROMOTION Increased ability provides for salary increases or the opportunity to be known as a consultant working with a number of dentists and other health workers. She may become a supervisor of a multiple operation of health work, or teach in dental and dental hygiene schools.

SOURCES FOR ADDITIONAL INFORMATION Contact: American Dental Association, 211 East Chicago Avenue, Chicago, Illinois, 60611; Ohio State Dental Board, 21 West Broad Street, Columbus, Ohio; the Ohio State Employment Service in your community: the American Dental Hygienists Association, 211 East Chicago Avenue, Chicago, Illinois 60611.

NOTES:

(Local openings, persons to contact, current pay rate, and training opportunities.)

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# Employment Information Series

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DENTAL TECHNICIAN
712.381-014

## NATURE OF THE WORK

The dental technician performs all the technical operations in the construction of prosthetic dental appliances for the replacement and repair of natural teeth according to the dentist's prescription. The dental technician works in the areas of complete and partial denture construction; crown and fixed bridge-work fabrication; gold or other metal cast partials and orthodontic appliances; and may specialize in one of these areas. The work is highly technical and involves packing and processing of plastics, metal casting, soldering, carving, polishing, and ceramic operations. The dental technician does not have direct patient contact but follows the dentist's instructions.

## EMPLOYMENT OUTLOOK

Opportunities for both men and women are equal and this is a field in which many handicapped workers are successful. A tremendous need exists both for experienced dental technicians as well as trainees. Expansion of this field is anticipated to continue over the next decade as part of the general expansion of the health service field and many new job openings will occur.

## FIELDS OF EMPLOYMENT

The dental laboratory technician may be employed in dentist's offices, commercial dental laboratories, dental supply houses, and veterans installations. Depending on his skill and financial situation, he may operate his own laboratory.

## REMUNERATION

The starting salary for trainee technicians learning on the job is usually about $60 per week. Experienced technicians earn up to $150 per wee or more depending upon his skill and experience. Master technicians, in managerial positions often earn as much or more than $250 per week. Graduates of a two year training course, without experience, begin at about $85 to $100 per week depending on their level of skill.

## REQUIREMENTS FOR ENTRY

### General-Educational

High school graduation is a minimum requirement for those seeking a career in this field. Those with a high degree of manual dexterity, good color perception, patience, and a liking for detail would do well to consider this field. Courses in art, ceramics, sculpturing, blueprint, reading, plastics, metalworking, chemistry, and physiology are useful.

### Training

One may enter this field as a trainee since most laboratories do utilize on-the-job training procedures. Information concerning apprenticeships is available from the National Association of Certified Dental Laboratories (address below). An alternative to this is attending a two year training program which offers a combination of school work and on-the-job training. A list of accredited schools offering formal training may be obtained from the Council on Dental Education of the American Dental Association.

### Certification

Although licensure is not required, certification by the National Board for Certification is desirable and is available after three years of experience to qualified dental technicians. Many laboratories prefer having certified dental laboratory technicians.

## WORKING CONDITIONS

Dental Laboratories are generally well-lighted, with work benches and storage arranged for good working conditions. In a private dental office, the technician is associated with the dentist and other assistants. In commercial laboratories, the technician works under a manager or owner, usually with a few or many other employees. Noise from grinding and polishing, odors from wax and general shop conditions prevail. Normal care in working with high speed motor-driven wheels and some shop hand tools must be used. A dental laboratory assistant generally works 40 hours a week, 5 days a week.

## AVENUES OF PROMOTION

Promotion may come through specialization, such as work on dentures, metal bridges, or ceramics. Classifications by experience and skills, such as "Junior", "Senior", and "Master Dental Technician" are also used for advancement and salary level. One may become a foreman in a laboratory or become the owner and operator of his own place of business.

## SOURCES FOR ADDITIONAL INFORMATION

Write the American Dental Association, 211 East Chicago Avenue, Chicago, Illinois, 60611; The National Association of Certified Dental Laboratories, 210 Thomas House, 1330 Massachusetts Avenue, N.W., Washington, D. C., 20005. Inquire of the Ohio State Employment Service for job information.

## NOTES

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# EMPLOYMENT INFORMATION SERIES

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## DENTIST

072.108

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## OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - The dentist locates and fills cavities in the teeth, straightens teeth, takes X-rays of the mouth, and treats gum diseases. Also, extracts teeth and substitutes individually designed artifical dentures. Cleans teeth and examines mouth for diseases affecting general health. Spends most time on patient care, may do some laboratory work including making dentures, inlays and other dental appliances. Many dentists send most of their laboratory work to commercial firms. Some employ dental hygienists to clean patients' teeth.

About 4% of dentists are recognized as specialists. Orthodontists straighten teeth. Oral surgeons perform operations on the mouth and jaw. The remainder specialize in periodontology (treating tissues supporting the teeth) prosthodontics (making artifical teeth or dentures), pedodontics (children's dentistry), oral pathology (diseases of the mouth), and public health dentistry. Three out of every 100 dentists are primarily employed in teaching, research, or other work.

**OPPORTUNITIES**

**Current** - Demand for dental services is likely to increase faster than the supply of dentists during the 1960's. Two-thirds of the new dentists being graduated yearly are needed for replacement alone. There is a serious need for intelligent research in many fields of dentistry, according to one authority, and a need for more dental educators with a sound liberal arts background.

**Trends** - New techniques, equipment and drugs as well as more extensive and effective use of dental hygienists, assistants and laboratory technicians will probably enable individual dentists to care for more patients. However, population growth, the huge backlog of unmet dental needs, and the increasing use of dental services will outweigh these factors and the need for more dentists will probably not be met in the near future.

**For women** - Constitute only 2% of the profession, but most modern dental schools welcome female students. The most numerous opportunities exist in research and children's dentistry.

**FIELDS OF EMPLOYMENT** - Private practice, 90%; remainder in the Federal Government, Armed Forces, or State agencies.

**AREAS OF EMPLOYMENT** - Most dentists are located in big cities, and 4 states (New York, California, Pennsylvania and Illinois) account for 40% of the profession. In deciding on a location the new dentist wanting a successful practice should take into account the following factors: number of dentists in area, and size of income and educational level of the population.

**REMUNERATION** - During the first year or two of practice dentists often earn little more than the minimum needed to pay expenses, but their earnings rise rapidly as their practice develops. The general net income of salaried dentists and those in private practice ranged from $6000 to $21,000 per year in

1958. The salaried group tended to be in the middle income range of $6000 to $12,000. Specialists generally approached the upper range.

METHOD OF ENTRY - Despite recent openings of new schools, nearly twice as many students have been applying as could be admitted. However, there were 182 vacancies in the 1959 entering class nationally, which indicates that well-qualified applicants tend to be in short supply.

In selecting students, dental schools give considerable weight to college grades and amount of education; over 57% of the students enrolled in 1957 had at least 3 years of college education; more than 40% had bachelor's degrees. All dental schools participate in a nationwide dental aptitude testing program. Scores earned on these tests are taken into consideration along with other information gathered about the applicant through recommendations or interviews. Many State supported dental schools give preference to residents of their particular State.

Education - Two years of predental college work followed by 4 years of professional training in a dental school are the minimum educational requirements; 7 of the 46 dental schools in operation in the United States in 1958 required 3 years of predental study. Predental education includes at least one, half-year course in organic chemistry, and a full year course in English, biology, physics, and inorganic chemistry. In dental college, the first 2 years are usually devoted to classroom instruction and laboratory work in anatomy, bacteriology, and pharmacology. The last 2 years are spent chiefly in gaining experience with patients in the school's dental clinic. The degree of Doctor of Dental Surgery (DDS) is awarded by most dental colleges; the degree of Doctor of Dental Medicine (DMD) is conferred by a few schools. Dentists interested in research or teaching often take graduate work in a basic science.

To become recognized as a certified specialist, a dentist must pass specialty board examinations requiring 2 or 3 years of graduate education and several years of specialized experience.

Colleges in Ohio - Ohio State University, Columbus; Western Reserve University, Cleveland.

Selection factors - Good visual memory, excellent judgment of space and shape, delicacy of touch, high degree of manual dexterity, intelligence and ability to master scientific subjects.

Licenses, examinations - To receive the necessary license to practice in Ohio, an examination must be taken. Prerequisites include graduation from a dental school meeting the requirements of the Ohio State Dental Board and U.S. citizenship. The examination, costing $50, consists of a 2½ day written test and 2½ days of clinical work. Ohio dentists wishing to specialize need no other certification than the Ohio license.

WORKING CONDITIONS AND HAZARDS - May work alone or with dental assistants. Stands most of the time. May teach part-time as well as practice. Possibility of exposure to infection from patients, and cuts and burns from equipment. Exposure to radioactive substances from X-ray equipment.

FOR ADDITIONAL INFORMATION - Above-mentioned universities, State Board of Dental Examiners, 322 East State Street, Columbus, Ohio; American Dental Association, 222 East Superior Street, Chicago 11, Illinois. Also, see "Employment Information Series," Part VI.

NOTES - (Additions, local information, etc.)

# EMPLOYMENT INFORMATION SERIES

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## DIE CASTING INDUSTRY

Dec.
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## INDUSTRIAL RELEASE

NATURE OF THE INDUSTRY - Die casting is a machine process used to produce thousands of castings in rapid succession from non-ferrous alloys. Molten metal (alloy) is forced under high pressure into metal dies or molds. After the resulting castings are hardened, they are automatically ejected. The accurately dimensioned, sharply defined, smooth surfaced castings require little or no machining.

Nearly 2/3 of die castings are made of zinc, about 1/3 are made of aluminum. Magnesium, brass, copper, and lead are used in some instances. The size of die castings ranges from small, button-sized components for business machines to large automobile grilles. Die castings are an integral part of transportation vehicles, vacuum sweepers, business machines, aircraft, precision instruments, hardware, industrial machinery, internal combustion engines, and many other current-day products. The simple die casting with its close tolerance takes the place of a multiplicity of other parts, saving handling and assembly costs, extra machine work, and the provision of separate fastening parts.

Die casting dies are made in at least two parts so that castings can be removed. The die is made from highest quality tool steel, and is fully annealed for maximum machinability. When the die cavity is sunk to the proper dimensions and shape, the steel is then hardened (except in the case of new sulphide bearing steel which retains maximum machinability even in the hardened state).

Die casting machines vary fundamentally only in the method of injecting metal into the die. They include the plunger type, suited mainly for zinc alloys and those of lower melting point; air injection type used chiefly for aluminum alloys; and the cold chamber machine, used for aluminum, magnesium, and copper base alloys.

In the die casting process, one half of the die called the cover half is usually fixed to the front or stationary platen of the machine, and the ejector half (to which it is intended to have the die casting adhere) is movable with the rear platen. The moving platen, through hydraulic pump action, moves the moving half of the die up to and against the stationary half of the die at whichpoint toggle mechanisms (links which multiply pressure mechanically) or direct hydraulic pressure force the two halves together in locked position. In the case of zinc or aluminum alloys, before the shot (injection of molten metal) is made, die cavities are evacuated of gas in order to cast in a vacuum and increase the density and quality of casting. In the shot itself, hydraulic pump or air compressor action forces molten alloy (heated to proper temperature in accompanying furnace) at great pressure into the die through the sprue or ram hole (entrance from outside die); runners (intermediate passages in die); to gate (entrance to die cavity). Allowing proper time for cooling (water-cooled), an ejector mechanism then releases the die in order that the die casting product can be removed.

Finishing operations of the die casting may include trimming, filing, punching, painting, plating, or anodizing.

The die casting cycle is by far the most rapid method of producing castings. As a rule, one man tends and operates each machine, hence the labor cost per die casting is low.

OCCUPATIONS IN THE INDUSTRY - Die makers and repairmen, melting furnace tenders, die casting machine operators, trim press operators, drill press light machine operators, inspectors, assemblers, die designers, spectoscope and X-ray analysts.

OPPORTUNITIES

Current - The die casting industry is gradually expanding as more products and series of products are found which can be produced more efficiently by this method. While opportunities in the small, independent shops are not quantitatively high, they do offer some openings to the non-experienced worker. The work schedule may be impaired by summer slumps which result from the slowdown in manufacturing industries using die castings. The problem of storage doesn't make it economically feasible for the small shop to maintain full production during summer slack periods.

Trends - Because of the youth of this industry and the continuing applications being found for die casting, it should expand. Methods are now being devised for the increased use of magnesium and other alloys, and for improving existing equipment to achieve stronger finished products of even closer tolerances than now exist.

For women - A substantial percentage of women are employed as assemblers and inspectors.

FIELDS OF EMPLOYMENT - Most die casting shops are small, some with less than ten employees, some with twenty or thirty. A few larger ones also exist in Ohio.

AREAS OF EMPLOYMENT - Die casting companies are found in many sections of Ohio, but are chiefly concentrated around areas of large population.

REMUNERATION - Representative rates for a sample number of die casting companies in Ohio: die casting machine operators, $1.46 per hour to $2.69; melting furnace tenders, $1.30 to $2.56; trim press operators, $1.30 to $3.15; drill press light machine operators, $1.25 to $3.15; die machinists, $1.85 to $3.11; die repairmen, $1.85 to $3.47; die makers, $2.25 to $3.50; assemblers, $1.15 to $1.45; inspectors, $1.30 to $1.85; maintenance, $1.85 to $2.25. Rates vary widely because of area cost of living differentials and extent of unionization.

ENTRY METHODS AND REQUIREMENTS - Die-casting machine operators are generally hired as beginners and learn how to operate the machines through on-the-job training. They can start operating machines within a few weeks while under supervision. Training should continue for 1 year. Assembling an inspecting occupations are learned on the job. Die-makers and repairmen ordinarily attain their skill through a 4 to 5 year apprenticeship. Die designers need a formal engineering education.

# DIE CASTING INDUSTRY

WORKING CONDITIONS - Dusty, dirty, hot. Premises are usually very noisy.
Hazards - Excessive heat. Flying metal.
Unions - Where organized, United Mine, Mill and Smelter Workers.
ADDITIONAL INFORMATION - Local die casting companies, Ohio State Employment Service local offices, American Die Casting Institute, 366 Madison Avenue, New York 17, N. Y.

NOTES - (Additions, local information.)

# Employment Information Series

Revised
December - 1965

DIETITIAN
077.168-014

NATURE OF THE WORK A dietitian is defined by The American Dietetic Association as one who has a college degree and advanced education or qualifying experience in the sciences of nutrition and management and is proficient in the application of the principles of these sciences in feeding individuals and groups. Five chief areas of concentration in dietetics include: food service administration, diet therapy, nutrition clinic, research, and teaching. While a dietitian employed in a large institution will usually specialize in one of these five areas, a dietitian in a small institution may be responsible for several areas. The following description, however, treats each of these specializations separately.

The food service administrator, employed in hospitals, government services, educational institutions, and business and industrial concerns, performs the following duties: directing the preparation of meals; formulating general departmental policies; employing, training, and supervising food service personnel; establishing and maintaining standards for food purchasing, production, and merchandising; maintaining food and cost records; instructing dietetic interns in basic managerial skills; developing specifications for the present and future equipment needs of the department; and sharing in the coordination and evaluation of the department's effectiveness.

The particular function of a food administrator in advertising agencies and food and food equipment firms tends to be promotional in nature. This work may involve: standardizing recipes for publication and writing recipe books; "selling" sound nutrition information to the public so that a firm's product will be purchased; conducting radio or television programs; and helping with advertising copy and writing instructions on the use of products for consumers' benefit.

A therapeutic dietitian, generally found in a hospital, has the following responsibilities: working with the medical committee and the hospital administration in making policies concerning normal and therapeutic diets; planning menus and directing the service of satisfying and attractive meals; instructing and supervising personnel in the service of patients' trays; conferring with physicians about patients' diets; interviewing and instructing patients to help them understand and meet their nutritional needs while in the hospital and at home; instructing nursing and medical students and dietetic interns in normal and therapeutic nutrition; participating in research related to human nutrition.

The nutrition clinic dietitian's interest is also diet therapy; however, she counsels patients who are not hospitalized. As a staff member of a hospital out-patient clinic or other medical clinic, she teaches both individuals and groups to understand diets that have been prescribed for them. She works with expectant mothers and persons with diabetes, overweight problems, and many other nutritional irregularities.

A research dietitian, employed in nutrition research laboratories of medical centers, universities, and business and government organizations, is concerned with a study of nutritive requirements and metabolic processes. She conducts experiments on individual foods, on methods of preparing and processing food items, and on the development of improved techniques for measuring quality, flavor, and nutritive values.

The teaching dietitian is employed primarily by a college, university, or hospital. In the college she instructs students in the area of food, nutrition, and institution management. In the hospital she provides nursing, medical, and dental students and dietetic interns with instruction designed for the specific needs of each group.

## OPPORTUNITIES

Current The demand for qualified personnel far exceeds the current supply. Since it is largely a woman's profession, marriage and family obligations create a large turnover. It is estimated that about 2, 000 new dietitians will be needed each year throughout the 1960's and beyond. Because of the present shortage, some institutions are hiring recent college graduates as assistants to ADA members, thus giving the graduate an opportunity to gain ADA qualifying experience.

Trends Accelerated hospital construction plans, new projects concerning the nutritional care of the aging population of the nation, expanding school and industrial lunch programs, steadily growing space travel studies -- all these point to numerous job possibilities infuture years.

Men An increasing number of men are entering this field as therapeutic dietitians in hospitals and food service directors in hospitals, colleges, and commercial organizations

FIELDS OF EMPLOYMENT About half of all dietitians serve in hospitals. Others direct the food service in schools and colleges, industrial organizations, and commercial eating places. A limited number of positions are now available with some of the airline, steamship, and railroad companies. Government opportunities include the Armed Forces, Veterans Administration, U.S. Department of Agriculture, U.S. Public Health Service, and city, county, and state health departments. Associations concerned with diabetes, arthritis, heart, cancer, and other physical disorders use dietitians as consultants. For those who demonstrate writing or food photography talents in addition to dietetic education, jobs are available with food and food equipment companies, magazines, newspapers, and advertising firms.

AREAS OF EMPLOYMENT Members of The American Dietetic Association are found in every state of the Union and many foreign countries. Ohio ranks third among the states in number of dietitians employed. Current membership records show that there are 1, 100 ADA dietitians working in Ohio; six of these are men.

REMUNERATION Starting positions in hospitals range from $4, 700 to $5, 500 a year. College and school food services offer annual salaries ranging from $4, 700 to $8, 000 for staff dietitians and from $7, 000 to $17, 000 or more for directors and supervisors. University teachers are paid between $5, 000 and $10, 000 a year. The entrance salary in the Federal Government for those who have completed their internship is $6, 050. New college graduates are hired at $5, 000. Dietitians enter the Armed Forces with the rank of second lieutenant or ensign and currently receive a monthly base pay of $294. 60 plus specified allowances. The present pay scale for the state of Ohio is: dietitian I (bachelor's degree), $400-480 a month; dietitian II (bachelor's degree plus two years' experience or master's degree plus one year's experience), $460-550 a month.

From two to four weeks' paid vacation time is granted annually after one year of service in most organizations. Holidays, insurance, and retirement benefits are usually received. Living accomodations are provided by some hospitals; the dietitian who occupies hospital quarters receives room, board, and professional laundry at nominal sums. In the field of college food service, the trend is away from living in, although the dietitian in charge of the residence hall food service may be asked to do so. Separate residence is maintained by those employed in community and public health nutrition, commercial and industrial fields, and school food service.

## REQUIREMENTS FOR ENTRY

Selection Factors high scientific aptitude, administrative ability, eagerness to help people, curiosity about food and its nutritive values, artistic flair for preparing food attractively, skill in oral expression, organizing ability, taste discrimination, good physical health, patience, ability to work with a variety of people

High School Education High school curriculum should fulfill all the general college entrance requirements; courses in biology, chemistry, physics, and mathematics are a good preparation for later studies.

A good test of one's aptitude for the field is a summer job under professionally qualified dietitians in commercial food services or hospital dietary departments. Other helpful work experience may be gained in jobs providing an opportunity for dealing with the public, such as a nurse aide and a retail sales clerk.

College Education Two major areas of specialization in college are food and nutrition and institution management. Generally, the college curriculum includes basic studies in chemistry, microbiology, physiology, literature, social sciences, education, food, nutrition, diet therapy, quantity food production, equipment, personnel, accounting, and institution management. Electives in the humanities are a desirable addition to the technical studies.

Positions in research and teaching require one or more advanced degrees, depending upon the responsibilities and specific knowledge required for the job.

Internship Upon college graduation, it is recommended that a year's internship be completed. The American Dietetic Association approves three types of internship: (1) an internship which places emphasis on general hospital dietetics; (2) a nutrition clinic internship which emphasizes normal nutrition and therapeutic dietetics; (3) an internship which stresses food service administration. If the internship is affiliated with a college or university, graduate credit may sometimes be earned. (A number of internships provide room, board, and professional laundry. Most of them also offer a stipend.)

The College of Medicine of The Ohio State University offers a Bachelor of Science Degree in Medical Dietetics. This program, the only one of its kind, requires 14 quarters of study and fulfills all ADA internship requirements. Its emphasis is on interpreting dietary prescriptions to meet the dietary and nutritional needs of both hospitalized and non-hospitalized individuals.

Licensure, Registration Dietitians are not required to be licensed or registered. Employers generally rely on affiliation with the American Dietetic Association as an indication of adequate preparation for positions. Application for membership is based on the following: (1) a bachelor's degree, including ADA specified courses, from an accredited school; (2) completion of one year's dietetic internship, or three years' acceptable experience in the dietetic field, or a master's degree including one year of qualifying experience, or a doctoral degree in food and nutrition, institution management, or a related area; (3) endorsement by three members, two of which must be active, or the director of internship.

## SCHOLARSHIPS

Undergraduates Many colleges and universities offer scholarships to undergraduates. Inquiries concerning them should be directed to the college itself. The American Dietetic Association offers several scholarships to students on the junior or senior level. The U.S. Army maintains an undergraduate scholarship program. Inquiries should be sent to The Surgeon General, Department of the Army, Washington 25, D.C. Attention MEDCM-OP.

Interns Many state dietetic associations offer scholarships to college students who have been accepted by internships. Twelve $500 scholarships are awarded annually by The American Dietetic Association.

WORKING CONDITIONS Dietitians generally work an eight-hour day and a forty-hour week. Since a hospital food service is required to function seven days a week, staff members take turns in supervising dietary care of patients and personnel on weekends and holidays. The same may be true for some commercial establishments.

Work surroundings generally may be described as pleasant: kitchens are sanitary and usually well equipped with modern appliances; offices are well ventilated and comfortably furnished. Some of the dietitian's duties may be performed at a desk; however, considerable time is spent standing, walking, and doing more physically arduous tasks.

PROMOTION POSSIBILITIES Each area of dietetics has its own promotional route. In general, however, an individual begins work as an assistant dietitian. Advancement may be made to assistant supervisor, to chief dietitian of a hospital dietary department, or district school lunchroom supervisor, or food service manager in a hotel or restaurant. Bases for promotion include advanced education, work experience, and demonstrated ability.

PLACEMENT SERVICES Contact the local public employment service office, director of the dietetic internship, local hospital federation association, college placement bureau, commercial employment agencies, personnel departments of business organizations which employ dietitians, credentials service of The American Dietetic Association.

SOURCES OF ADDITIONAL INFORMATION The American Dietetic Association, 620 North Michigan Avenue, Chicago, Illinois 60611; Career Information Service, New York Life Insurance Company, Box 51, Madison Square Station, New York 10, New York; Director of Dietetic Service, Veterans Administration, Washington 25, D.C.; The Surgeon General, Public Health Service, Department of Health, Education, and Welfare, Washington 25, D.C.; American Home Economics Association, 1600 Twentieth Street, N.W., Washington, D.C. 20009; American Public Health Association, Inc., 1790 Broadway, New York 19, New York.

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Ohio State Employment Service
Bureau of Unemployment Compensation

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## DRAFTSMAN, MECHANICAL

007.281-014

Revised
December
1962

**NATURE OF THE WORK** - Makes detailed drawings, giving dimensions and specifications, of machinery and machine parts from sketches, specifications, or notes prepared by the mechanical engineer or designer engineer. Uses various drawing instruments, a drafting machine and other tools to translate these ideas or calculations into detailed, accurate working plans to be used by patternmakers, machinists, toolmakers, and others in constructing the desired object. It is desirable to have enough shop experience and knowledge to be able to describe exactly what materials and procedures the craftsman is to use in making the product. May be required to calculate the strength, reliability, or cost of materials used in the final construction. The term "draftsman" includes all persons who work on the preparation of working drawings with the exception of tracers. Mechanical draftsmen may be classified as: 1. Chief Draftsman or Drafting Supervisor 2. Designer (design draftsman or mechanical engineer) 3. Draftsman 4. Detailer or Junior Draftsman 5. Checker.

**OPPORTUNITIES**

**Current** - This job is listed as a shortage occupation in Ohio. Excellent opportunities exist for well-qualified men and women.

**Trends** - Opportunities are expected to increase in the next few years with technological advancements and changes in industrial operations. More draftsmen will be required as supporting personnel of engineering and scientific occupations.

**For Women** - Less than 10% of all draftsmen are women. Good opportunities do exist. Many women are filling positions demanding initiative and responsibility.

**FIELDS OF EMPLOYMENT** - The majority are employed by manufacturing industries, principally machine, primary metals, fabricated metal products, aircraft and automobile parts, and ordnance. About one third of all draftsmen work for architectural or engineering firms, public utilities, construction companies, and the government.

**AREAS OF EMPLOYMENT** - The largest number of draftsmen are located in or around large industrial areas; however, employment in this occupation can be obtained in any city or state.

**REMUNERATION** - The rate of pay is dependent upon the individual's ability, the amount of education and training received, experience, initiative, and the area of employment. Beginning salaries in private industry range between $325 and $400 per month. Experienced draftsmen, without a college degree, may earn as much as $600 per month. Chief Draftsman or Drafting Supervisors receive higher salaries.

# DRAFTSMAN, MECHANICAL

REQUIREMENTS FOR ENTRY

General - Possess the ability to comprehend forms in space and understand relationships of plane and solid objects. Numerical aptitude, interest in mechanical objects, patience, neatness, accuracy, and an aptitude for detail. Ability to follow instructions and cooperate with others.

Education - Graduation from an accredited high school with training in such areas as mathematics, physical science, and mechanical drawing. It is recommended that the prospective draftsman complete as much technical schooling as possible before seeking employment. This training may be obtained by attending technical institutes, colleges offering special 2 year programs, technical high schools, correspondence schools, vocational and trade schools, serving 3-4 year apprenticeship, or on-the-job training combined with part-time schooling. This training involves further study in mathematics, mechanics, electricity, mechanical drawing, descriptive geometry, shop practices, and allied subjects.

Physical - Good eyesight and health.

Equipment Required - Mechanical draftsmen may be required to furnish their own kit of drawing instruments, triangles, scales and tables.

WORKING CONDITIONS - Most of the time the draftsman will work alone, but around others, in a well lighted and ventilated room. The job is confining and much of the time is spent sitting at a drawing board.

AVENUES OF PROMOTION - The draftsman may be promoted to design draftsman, mechanical engineer or chief draftsman depending upon the initiative, ability, education, and experience of the individual.

FOR ADDITIONAL INFORMATION - Write or contact: American Federation of Technical Engineers, Room 901 F. Street, N. W., Washington 5, D. C.; National Home Study Council, 200 K. Street, N. W., Washington 6, D. C.; local employers; the local Ohio State Employment Service office; Bureau of Apprenticeship Representative.

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

DRY CLEANING
INDUSTRY

## INDUSTRIAL RELEASE

NATURE OF THE INDUSTRY - The dry cleaning industry is composed of all cleaning, dyeing and pressing establishments that perform these operations; they process clothing of many fabrics and styles, including hats, gloves, furs, draperies, blankets, rugs, curtains, etc. Many items are brought to cleaners which are irreplaceable, requiring the special skill of the group. The work is generally completed ready for the customer in as short a time as the same day, even 30 minutes and one hour - up to extensive work that may require several weeks, such as reweaving cloth. The cleaning work is done with various solvents, plus spotting and coloring by specialists. The operations have been greatly speeded up by modern methods and systems of identification, sorting, pressing and attaching ornaments, buttons and articles removed during the cycle of cleaning. Many places include shirt laundering as an associated service. The dry cleaning is foten done at the store site, although some companies have retail stores and a remote building for processing. Shirt laundering equipment may or may not be at the store. The service is often done in separate stores or in connection with self-service laundries. There are 5 general types of dry cleaning establishments; (1) press shops or tailor shops; (2) wholesale cleaning plants; (3) drive-in plants; (4) pick-up and delivery plants; (5) chain dry-cleaning establishments. Some dry cleaning businesses offer several or all of these services.

OCCUPATIONS WITHIN THE INDUSTRY - The industry requires a large number of people in various recognized occupations; counter girls, checkers, markers, machine drycleaning operators and helpers, extractor operators, spotters, machine pressers, hand pressers, knitted goods blockers, glove cleaners, glove finishers, fur cleaners, fur glazers, hat cleaners and blockers, moth-proofers, and packers; delivery men and repair service women are also very necessary people. Managers of stores are specially trained in drycleaning store management.

OPPORTUNITIES

Current - The use of many women in the industry as they are trained for good paying jobs is increasing. Hours of work can sometimes be arranged to fit a home schedule, providing added income. Most establishments enable men to learn on the job.

# DRY CLEANING INDUSTRY

Trends - A very general increase in this business. People wear lighter colors in all seasons and have more clothes and personal articles for cleaning. This work is done more frequently, as people have more money to pay for appearance and "dress-up" more. A larger work force will be needed, including both men and women, as a natural increase in these services.

AREAS OF EMPLOYMENT - Almost every Ohio community has its cleaning establishments from pick-up and delivery locations in small towns served by truck routes, to the extensive, large establishments in the cities. Hundreds of neighborhood shops are operated in the shopping centers, prevalent over the State. Self-employment is not uncommon, particularly in smaller plant-shop operations.

REQUIREMENTS FOR ENTRY - This is a personal service occupation. The applicant should like to deal with people, enjoy the service-work idea and the ability to find steady employment. Reasonable good health is required as the work is generally done while standing and walking. The worker may also be required to lift baskets of materials to be cleaned and to hang articles on racks. Good vision is required to check the completeness of the cleaning, for re-attaching buttons and ornaments, and to judge color matching in dyeing and spot cleaning.

REMUNERATION - Rates of pay range from a learning rate of 80¢ to $1.00 per hour to the higher rate of $1.90 per hour for the most skilled work of spotting and pressing.

UNION REPRESENTATION - Workers may be represented by the following groups: International Association of Cleaning and Dye House Workers or the Amalgamated Clothing Workers of America. Many are not unionized.

WORKING CONDITIONS - Modern dry cleaning plants are regulated by state and local laws, as well as fire insurance requirements. Equipment is safety checked as well as type of storage containers and disposal of solvents. Generally, work is in or around heat, moisutre, noise, odor of solvents and clothing to be cleaned. Steady pace of work to keep up with customer demands. Holidays provide peak load periods; in advance of such days part-time help may be used to meet the load of work.

FOR ADDITIONAL INFORMATION - Check your local library sources for information; inquire at local dry cleaning establishments or write to the National Institute of Dry Cleaning, 909 Burlington Avenue, Silver Spring, Maryland.

NOTES - Additions, local sources, rates of pay, training opportunities, etc.

# EMPLOYMENT INFORMATION SERIES

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Ohio State Employment Service

## OCCUPATIONAL RELEASE

## DRY CLEANER
362.782-010

## SPOTTER
362.381-010

Revised
May
1960

**NATURE OF THE WORK** - These two occupations are handled by one individual in the new synthetic solvent dry cleaning operations which currently account for about 75% of the business in such a city as Columbus, Ohio. This is because the new plants have reduced the amount of skill required by the individual worker through machinery. The dry cleaner or dry cleaner/spotter sorts the garments, draperies, or other articles into their proper classifications for dry cleaning. He weighs and records the poundage of each load, dry cleaning the garments or materials in either petroleum or synthetic solvents in specialized equipment, some of which is extremely complex and requires both dry cleaning skill and mechanical ability to operate and maintain. Prepares the soap stock solutions required for the various cleaning processes, extracts the solvents from the dry cleaned garments in centrifugal extractors, and dries and deodorizes the extracted garments in mechanical tumblers or heated drying rooms. Also regulates the correct cleaning cycles as to washing time, extractor times and speeds; correct drying and deodorizing time, and temperatures; and periodically tests the condition of the solvent. Also operates the distillation and pressure filtration equipment to keep the dry cleaning solvent pure and crystal clear. The spotter's job in most plants calls for a high degree of skill and knowledge. Garments are inspected and classified for spotting, wet cleaning, and those that may occasionally need to be re-dry cleaned. It is frequently necessary to identify spots and stains that the dry cleaning solvents did not remove, and it is then that the spotter removes these stains with water, steam or suitable chemicals that are safe to use on the particular fabric and dyestuff. Special techniques and specially designed equipment are used to do this job. The work is divided into three different classifications--wool, silk, and pre-spotter. The silk spotter requires the greatest amount of skill and ability.

## OPPORTUNITIES

**Current** - There are no sharp shortages or oversupplies reported in this occupation in Ohio at the present time.

**Trends** - The dry cleaning industry will share in the increased business caused by the rising population. No sharp deviation from the current picture is anticipated. (One factor which might affect the picture is the new development of self-service, coin-operated dry cleaning machines. It remains to be seen whether they can do a job of sufficient quality to compete with custom dry cleaning. The spotting problem would still exist. So would the finishing problem.)

# DRY CLEANER/SPOTTER

FIELDS OF EMPLOYMENT - Centrally located dry cleaning plants, or retail shops maintaining their own cleaning equipment. (The latter are synthetic solvent operations.) Petroleum solvent operations require extensive fireproofing--this cost restricts them to one central plant for the actual dry cleaning.

AREAS OF EMPLOYMENT - The larger population centers offer the greatest number of opportunities.

REMUNERATION - $5,200 to $7,500 per year.

METHOD AND REQUIREMENTS FOR ENTRY - The dry cleaner in the petroleum solvent plant should have the ability to make decisions, the ability to concentrate and mechanical dexterity. Educational courses that are helpful include chemistry, physics, mathematics, machine shop and textiles. The spotter in the petroleum solvent plant should be able to solve problems of a complex nature, be able to plan work and to concentrate. Educational courses that are helpful include chemistry, physics and textiles. The dry cleaner/spotter in the synthetic solvent plant needs the ability to follow directions, mechanical ability, and ordinary good judgment.

Training - In petroleum solvent plants the dry cleaner learns his job by working as a helper. The length of time it takes to learn the job varies from six months to two years. The National Association of Dyers and Cleaners operates the National Institute of Drycleaning in Silver Spring, Maryland (a suburb of Washington, D.C.). Training at this school is open to members of the Association and their employees who have one or more years of practical experience in a dry cleaning plant, and who are 18 years of age or over. The course is 12 weeks in duration... In petroleum solvent plants the spotter generally learns his job informally, including wool and silk spotting, and wet and dry cleaning. Approximately three years or longer of on-the-job training is needed to qualify as a silk spotter. To become a wool spotter requires only three months to a year of work experience. The National Institute of Drycleaning also offers a 12-week course in spotting. In synthetic solvent plants the drycleaner/spotter also learns on the job as a helper, and his training takes about six months.

For women - Increasing acceptance of women.

Unions - Workers are not completely unionized in this field. Two unions representing these workers are the International Association of Cleaners and Dye House Workers and the Amalgamated Clothing Workers of America.

WORKING CONDITIONS - Generally, these have improved in recent years so that some form of temperature control is used to make the work area less hot. Also, solvent odors have been reduced greatly. Petroleum solvents are slightly inflammable and require special handling to prevent fires. There are certain peak periods of the year in which overtime work is required--chiefly, March through June, and September through November.

AVENUES OF PROMOTION - The dry cleaner may be promoted to spotter, foreman, plant manager, or may enter own business. Wool spotters may be promoted to silk spotter, to supervisory positions, or may enter their own business.

ADDITIONAL INFORMATION - Local dry cleaners or write to the National Institute of Drycleaning, Silver Spring, Maryland.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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ELECTRICAL
ENGINEER
003.081-018

Revised
January
1963

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - The electrical engineer is concerned with the production, transmission, distribution, and application of electrical energy. A rapidly developing branch of Electrical Engineering is that of electronics which is concerned with the emission, behavior, and effects of electrons especially in a vacuum, in gases, or certain solid materials. The major branches of electrical engineering are: power generation, transmission, and distribution; illumination; wire communications; electronics (radio, television, radar, automation, electric data processing equipment, etc.); and manufacture of electrical or electronic machinery and equipment. Areas of specialization include: research and development, planning and design, application, construction, installation, testing, operation, maintenance, management, sales, and teaching. Largest number being employed in research and development, planning and design, management, and manufacturing operations.

OPPORTUNITIES

Current - Opportunities for employment in this field are very good. Developments in the field of electrical engineering, particularly electronics, have increased the demand for electrical engineers beyond the number graduating from college.

Trends - This field is expanding rapidly at the present time and is expected to continue in its growth during the next few years. Research and development in newer areas of work such as nuclear power generation, aviation electronics, guided missiles and spaceships, computers, and automatic electronic control systems will offer many opportunities and create a need for an increasing number of people with master's and doctorate degrees.

For Women - Most women are engaged in research and development; however, good opportunities exist in the other areas of specialization.

FIELDS OF EMPLOYMENT - Most electrical engineers are employed in the following industries: electrical machinery and equipment manufacturing, communications, utilities, government, construction, and electric transportation.

AREAS OF EMPLOYMENT - Employment can be secured in most states and cities.

REMUNERATION - The beginning salary for engineers with a bachelor's degree and no experience ranges between $500 and $600 per month. Individuals with master's or doctorate degrees receive higher starting salaries. After ten years of experience, the electrical engineer may earn over $750 per month. With additional experience, education, and ability the individual may earn from $1000 to $1500 per month. Persons in executive or administrative positions may earn more than $20,000 per year.

# ELECTRICAL ENGINEER

## REQUIREMENTS FOR ENTRY

Selection Factors - Mathematical and scientific aptitudes, ability to express one-self in oral and written forms, creative ability, and a good imagination that will enable the individual to visualize objects in space. Possess initiative, perseverance, patience, curiosity and mature judgment. Be accurate, exact, and logical in reasoning process and work activities. Ability to get along well with others and assume responsibility.

Education - The minimum requirement is a Bachelor of Science degree in Electrical Engineering. Sometimes a bachelor's degree in a related area, such as mechanical engineering or physics, is acceptable. The course of instruction includes such basic and technical subjects as the following: English, algebra, trigonometry, calculus, chemistry, physics, mechanics, principles of curcuitry, machinery, electrical measurements, thermodynamics, electronics, and engineering drawing. Advanced degrees are almost essential for those who desire to specialize or do research work in any field of electrical engineering.

The following schools offer programs in electrical engineering that are approved by the Engineers' Council for Professional Development: University of Akron, Case Institute of Technology, University of Cincinnati, University of Dayton, Fenn College, Ohio Northern University, Ohio State University, Ohio University, University of Toledo, and Youngstown University.

Licenses and Examinations - Licensure is required by most states for the legal right to practice professional engineering where public health, life or property may be affected by the engineer's work. Requirements for registration and the cost of licensure in Ohio may be obtained from the Professional Engineers and surveyors Board, 21 West Broad Street, Columbus 15, Ohio.

AVENUES OF PROMOTION - The graduate Electrical Engineer usually begins in a routine and modest position in a company, such as construction work or equipment testing. Many companies start their newly-hired graduates in training programs that will give them practical experience in their different technical departments. The individual may then work in a particular specialty and progress vertically; or gain experience and knowledge in various departments and then specialize in management. Opportunities for advancement are excellent.

SOURCES FOR ADDITIONAL INFORMATION - Write or contact: American Institute of Electrical Engineers, 33 West 39th Street, New York 18, New York; Engineers Council for Professional Development, 29 West 39th Street, New York 18, New York; Ohio Society of Professional Engineers, 5 East Long Street, Columbus 15, Ohio; Professional Engineers and Surveyors Board, Wyandotte Building,21 West Broad Street, Columbus 15, Ohio; the local Ohio State Employment Service office; companies or agencies employing electrical engineers; any of the accredited schools listed in this release under Education. Read: "The Indispensable Man", published by the American Institute of Electrical Engineers; "Your Future in Electronic Engineering" by Sol Levine, and "Orientation to Engineering" by Philip Pollack.

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: May 1968

# ELECTRICIAN
# (WIREMAN)

824.281
(all suffixes)
829.281-022

NATURE OF THE WORK The electrician does layout work for, assembles, installs, maintains, repairs, and inspects every kind of electrical equipment including conduits, appliances of all sorts, motors and transformers, electrical fixtures, alarms and alarm systems, machines, and all related wiring. Each electrician must know how to read and interpret blue prints, must keep abreast of national, state, and local building and electrical codes, must understand the basic theory of electricity, and should have a knowledge of making cost estimates. In addition, each electrician must have his own set of tools: pliers, screwdrivers, braces and bits, and knives. Voltmeters, ammeters, scaffolding, ladders, and larger equipment, however, are generally provided by the employer.

The electrician who is well-versed in all kinds of electrical construction and repair naturally offers the most serviceable skill to any employer. The electrician, no matter where he is found, applies the same basic knowledge, but, because of the vast field in which electrical service is required, two main kinds of electricians exist: *construction (general)* electricians (D.O.T. 824.281-014) and electrician repairmen (D.O.T. 829.281-022)

Construction electricians are employed mainly in providing electrical service for new and remodeled buildings. They install all major and minor electrical equipment from the largest transformers to the most intricate lighting systems. More experienced electricians may assist in developing better and more efficient heating, lighting, power, and air conditioning systems for new and remodeled buildings. Those construction electricians who specialize may work only in commercial building, in residential building, in signals and communications, in manufacturing, or in public utilities.

Electrician repairmen (often called industrial and/or maintenance electricians) concentrate on repairing, servicing, and maintaining all electrical equipment found in industrial, governmental, private, and commercial installations. By frequently testing and inspecting electrical equipment, they provide a preventive care service and enable the installation they serve to run with maximum efficiency and minimum loss of time and manpower. In addition, they must be able to quickly analyze, diagnose, and repair all electrical failures and malfunctions.

The majority of construction electricians belong to the International Brotherhood of Electrical Workers, while maintenance and industrial electricians are primarily affiliated with the United Auto Workers and related labor unions.

EMPLOYMENT OUTLOOK There is an annually increasing need for trained electricians, particularly for construction electricians, due to increases in numbers of appliances used, in the extent of electrical services available, and in increases in the amount of building construction. The projected increase by 1975 in the area of services is 42.3% and for contract construction 31.7%, both areas reflecting a need for larger numbers of both industrial-maintenance and construction electricians. The concentration of electricians is in metropolitan areas where building, general, and private contractors are found.

## CLOSELY RELATED OCCUPATIONS

Electronics Field Engineer
Elevator Repairman, Inspector
Neon-Sign Serviceman
Signal Installer - Repairman
Assembler, Electronics Products
Cable Splicer
Radio Mechanic

*AREAS OF EMPLOYMENT* The electrician, whether he be a regular employee or an on-call serviceman, is indispensible to every organization. The greatest numbers of electricians are employed by building and electrical contractors. A second large group is found in private business - as owners or employees of an electrical contracting firm or in the field of sales and supply of electrical equipment. The remainder is found in every industry and business from aircraft manufacturing to commercial shipbuilding.

REMUNERATION In 1964 (from the Occupational Outlook Handbook) the national minimum, median salary of all new and experienced journeyman electricians averaged $4.68 per hour. In 1967, this figure was $4.87 per hour, among the highest salaries paid in the construction field.

Today, all construction workers average 37.5 hours per week of work; electricians, particularly outside linemen, average fewer hours per week of work, being subject to weather conditions. Compared with an average hourly rate of $4.00 for all construction workers, electricians average $4.34 per hour( this average includes salaries of helpers, apprentices, and journeymen). The minimum salary per hour for an Ohio union-affiliated journeyman electrician is $4.77.

Non-union members average 15% to 20% less per hour salary. Union members earn double salary for all new construction overtime work and time and one-half for all repair and remodeling work. Non-union members are awarded extra salary benefits for overtime work according to the individual policies of the firms for whom they work. The starting salary of an apprentice is between 50% and 60% of the journeyman's wage and increases proportionately during apprenticeship service.

## REQUIREMENTS FOR ENTRY

General and Training To learn all aspects of an electrician's work requires several years' study. Individual study by serving as an electrician's helper may provide the necessary training. Many acquire these skills through Armed Services' training. The most popular and widely accepted means of study is through a registered apprenticeship training program, usually four (4) years in length. To be enrolled as an apprentice electrician, one must have a high school diploma or the equivalent (see the "Training Directory", pp. 102-107, for specific information about High School Equivalence examinations), must be of legal working age, and must have average or above intelligence. Upon application, the prospective apprentice candidate, in most cases, will be tested for general intelligence, aptitude for the trade, and perception, among others. The applicant may be given additional credit for ranking in the upper portion of his high school graduating class and for such background courses as algebra, geometry, trigonometry, mechanical drawing, exploratory electricity, and others which directly relate to his vocational choice of electricity. Requirements among apprentice sponsors vary widely; each prospective applicant should inquire about more specific entry requirements among his own local sponsors or with the Joint Apprenticeship Council in his area.

The apprentice training program itself consists of a minimum of 144 hours per year of classroom instruction and four year total of 8,000 to 10,000 hours of on-the-job training. The most widely accepted apprenticeship programs are those registered with the Ohio Apprenticeship Council and whose standards comply with the National Bureau of Apprenticeship and Training (see "Training Directory," pp. 1-5 for information regarding general apprenticeship preparation). Upon successful completion of the apprenticeship program, each candidate is awarded a certificate giving him journeyman status by the National Bureau of Apprenticeship and Training.

AVENUES OF PROMOTION The qualified electrician, with experience, may advance to job foreman, job estimator, or building superintendent in larger contracting organizations. Many electricians specialize in one phase of electrical service or go into business for themselves. Further advancement may come by entering the field of electrical sales and supply.

**WORKING CONDITIONS** Although an electrician's work does not require great physical strength, it is strenuous and physically demanding. The electrician works both inside and out, standing, stooping, and crawling - wherever electrical service is needed. He is constantly subject to falls, shocks, and electrical burns.

The electrician works on a national average of 40 hours per week excluding time spent for emergency calls and repairs. The outside electrician, often called a lineman, however, works when weather permits, his number of hours per week averaging less than 40. When under contract, the electrician generally receives such benefits as sick leave, hospitalization, retirement benefits, medical insurance, and paid vacation time.

**SOURCES OF ADDITIONAL INFORMATION** Write or contact:

1) Local electrical and building contractors.

2) Local Ohio State Employment Service Offices.

3) International Brotherhood of Electrical Workers' local unions.

4) International Brotherhood of Electrical Workers'
National Office
1200 Fifteenth Street, NW
Washington, D.C. 20005

5) National Joint Apprenticeship and Training Committee for the Electrical Industry
1200 Eighteenth Street, NW
Washington, D.C. 20036

Prepared and distributed
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Ohio Bureau of Employment Services
145 South Front Street
Columbus, Ohio 43216

# EMPLOYMENT INFORMATION SERIES

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ELECTRONICS
INDUSTRY

Nov.
1960

## INDUSTRIAL RELEASE

**NATURE OF THE INDUSTRY** - Pre-World War II radio equipment manufacture has developed into what is known as the electronics industry, because of many new electronics product applications. Electronic products utilize the properties of electrons (very light, negatively charged particles) especially in vacuum or gas filled tubes and semiconductor devices. Within electronic products, electrons flow through wired or printed circuits, tubes and semiconductors, and other components. Electron tubes and semiconductor devices control electron flow. Many electronic products transmit or receive radio waves.

Four product divisions exist. Consumer. Tv sets, radios, hi-fi, phonographs, recorders, hearing aids. Military and Industrial.Missile and satellite electronic guidance systems, and electronic detection devices for the military; and electronic data-processing machines, testing instruments and control devices;broadcasting, telecasting, and other communications equipment; and electronic microscopes and telescopes for industry. Electronic Tubes and Semiconductors. Receiving tubes--miniature and subminiature, tv picture, and special purpose tubes. Other Electronic Components. Transistors, capacitors, etc.

Most plants produce one type of end product; research and development are kept separate.

**OCCUPATIONS IN THE INDUSTRY** - Professional and technical: Engineers;electrical or electronic, mechanical, industrial, chemical, ceramic, metallurgical. Scientists: physicists, chemists, mathematicians.Others: electronic technicians, draftsmen, engineering aids and assistants, technical writers, specifications writers. illustrators. Plant occupations: Assembly. Machining. Fabricating:sheet metal workers, cabinet makers and finishers, glass lathe operators, punch press operators, blanking machine operators, shear operators, grid lathe operators, spot welders, crystal grinders and finishers, coil winders. Processing: electroplaters, anodizers, tinners, silk screen operators, etching equipment operators, infrared oven operators, hydrogen furnace firers, exhaust operators, sealers.Inspection and testing: (by product indication). Maintenance; machinists, welders, sheet metal workers, firesetters, painters, plumbers, etc.

## OPPORTUNITIES

Current - Employment doubled in the past decade to more than 450,000.Growth continuing, but at slower pace, nationally and locally.

Trends - Replacement needs and expansion will create thousands of additional openings nationally. Greatest demand--electronic engineers and electronic technicians; then, scientists, other engineers and technicians;then skilled maintenance workers. Mechanization may modify demand for semi-skilled workers, but many products do not appear to be adaptable to highly automatic manufacturing processes. Growth of total employment is not expected to be as rapid as in the 1950's since the "crash" aspect of previous years is levelling out. Some companies' success may depend on their ability to convert from military to industrial production.

For Women - Comprise half of electronics industry labor force. Employed chiefly in production and office work.Mechanization may affect some less-skilled workers.

FIELDS OF EMPLOYMENT - In Ohio, manufacture of electronic components and accessories; radio and tv receiving type electronic tubes; cathode ray tubes; radio and tv transmitting, signalling, and detecting equipment and apparatus; radio and tv receiving sets; and telephone and telegraph equipment. In 1959 in Ohio, 8967 men and 7126 women for a total of 16,093 were employed in these fields.

AREAS OF EMPLOYMENT - State-wide.

REMUNERATION - In April, 1959, production workers averaged $89.37 a week. A 1958 hourly wage breakdown showed semi-skilled assemblers receiving $1.40-$1.95; precision assemblers, $1.85-$2.35; machinists, $2.00-$2.65; electronics technicians, $2.30-$2.85; inspection occupations, $1.50-$2.75; testing occupations, $1.65-$2.90. See individual briefs for occupations not listed.

ENTRY METHODS AND REQUIREMENTS - Usual minimum requirement for engineers and scientists, B.S. degree. Many have advanced degrees. Technicians and certain plant production workers require technical training--electrical and electronic theory, mathematics, drafting, and schematic reading. Many craftsmen have received apprenticeship or on-the-job training. Most highly skilled electronics technicians have completed a trade course in either a private technical school or in the Armed Forces--some have learned on the job. Some technicians must qualify for a Federal Communications Commission 1st or 2nd class license. Chemistry and physics laboratory technicians, engineering and scientific aids and assistants, and mathematical assistants frequently have had some college training or may be upgraded from jobs as helpers or lower grade assistants. High school graduates with high school mathematics, physics, and chemistry are preferred in hiring helpers or lower grade assistants. Draftsmen usually enter their trade through trade or technical school education. Technical writers need a combination of writing ability and an understanding of the technical field.Illustrators also need special training. No formal training other than high school is required for some semi-skilled and unskilled jobs.

WORKING CONDITIONS - Plants are usually clean and air-conditioned, well-lighted, and relatively free of noise. Hazards include high voltage shock, burns from soldering irons, cuts, bruises, and punctured fingers.

Unions - Brotherhood of Electrical Workers; International Association of Machinists; and the United Electrical, Radio and Machine Workers of America (Independent).

ADDITIONAL INFORMATION - Local electronics industries, National Council of Technical Schools, 1507 M St. N.W., Washington 5, D. C.

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed
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Ohio State Employment Service**

## ELECTRONICS TECHNICIAN
003.181-014

Revised
Nov.
1960

## OCCUPATIONAL RELEASE

NATURE OF WORK - Performs on a level of skill which falls between that of a craftsman and the professional engineer or scientist. Work is technical in nature but narrower in scope than that of an engineer or scientist. Performs job above the routine operating, maintenance, and repair level.

Applies theoretical knowledge and manual skills to preparation or interpretation of layouts and other diagrams, design of electrical circuits, or the assembly, wiring, and installation of intricate electronic units. May also diagnose the trouble in a piece of complex equipment, conduct tests to verify the diagnosis, and make necessary repairs. Often uses engineering handbooks, oscilloscopes, signal generators, ohmmeters, multi-testers, meters, and other instruments; computing devices such as sliderules and basic handtools.

In research activities usually assists scientists or engineers in building, testing, and sometimes even designing experimental electronic apparatus. May be called upon to devise practical solutions to problems of design, select suitable materials, determine the best method of building a piece of equipment, and evaluate the operating characteristics of the equipment after it is built.

In manufacturing operations often supervises the production and assembly of electronic equipment. May operate complex equipment, perform troubleshooting functions, or do the more complicated types of testing and inspection work. Of particular importance in government work--quality assurance and reliability functions. Also, assists engineers in designing and setting up different types of testing equipment for use in manufacturing operations.

In maintenance and repair work, utilizes knowledge above the routine repair level. In the Federal Aviation Agency is responsible for keeping radar and other electronic equipment, used to handle air traffic, in perfect working order. In Department of Defense, services radar, sonar, loran, and other warning and detection devices. For manufacturers and purchasers of electronic computers, services and repairs their complex machines.

OPPORTUNITIES

Current - Nationally, opportunities are excellent for qualified applicants.

Trends - No end in sight of the need for electronics technicians. Possible factors which may affect employment: slower growth of the industry in 1970's compared to 1960's, necessity of converting from military to civilian production by some companies, contract cancellations due to rapid obsolescence of military equipment, or the unlikely prospect of the defense program being cut sharply. Place of employment or ownership of company he works for might be affected, but prospects for the electronic technician's continued employment are very good.

FIELDS OF EMPLOYMENT - Communication, industrial measuring, recording, indicating and controlling devices; navigational equipment, guided missile controls; electronic computers, and many other types of equipment using vacuum tubes and semiconductor circuits. Because of the breadth of the field, technicians often become specialists in one area.

AREAS OF EMPLOYMENT - State-wide.

REMUNERATION - Nationally selected averages in April, 1959, showed electronics technicians receiving from $2.30 to $2.85 an hour.

METHOD OF ENTRY - Most training authorities recommend a 1 or 2 year course in an accredited technical school or institute. High school graduation would necessarily precede, with emphasis on mathematics and physical sciences. U. S. Armed Forces technical schools have helped thousands of veterans to qualify for civilian electronics specialist jobs.

REQUIREMENTS OF ENTRY -

Selection factors

General - Inquisitive type of mind, ability to write clearly and effectively, above-average sight and hearing. Ability to handle basic hand tools as well as delicate laboratory and testing equipment.Above-average intelligence, numerical aptitude, spacial aptitude, form perception, motor coordination, and finger and manual dexterity. Stable temperament, alert, liking for detail work.

Educational - Technical school education includes applied science,applied mathematics, and applied engineering, as well as basic skills in the use of instruments, machinery, and tools.Other sources than technical institutes for this type of education:some junior and community colleges, and extension divisions of universities and colleges offering 2-year technical programs.Not all technicians have had specific preparation.. Included are engineering or liberal arts students who have completed all requirements for degrees, some graduates of liberal arts colleges, and some other persons with post high school education in mathematics and science. Important high school subjects include algebra, geometry, trigonometry, solid geometry and physics.Important college or technical school studies include English (in order to communicate ideas clearly in writing and orally), industrial psychology, general science, chemistry, physics, mathematics, and chemical and electrical engineering.

Physical - General good health, good vision, use of hands and fingers.Some handicapped workers have been finding employment in this field.A paraplegic, for instance, is able to perform the duties satisfactorily if he possesses sufficient strength in his arms and hands.

Knowledges - Electronics theory, physical science, and mathematics.

Training - On-the-job training is ordinarily given.Because of the rapidly changing nature of electronics, workers must continue training throughout their working careers--company training programs are given as new designs and methods are developed, and technicians may also learn of new developments through trade literature, lectures, demonstration, and discussion groups.

WORKING CONDITIONS - Research laboratories are generally air-conditioned, with good lighting conditions. Most manufacturing plants are well-lighted and adequately ventilated. Hazards are not a major problem. Shocks from high voltage are the most serious.Burns from soldering irons, cuts,bruises, punctured fingers and similar minor injuries are most common.

AVENUES OF PROMOTION - Supervisory positions.Increased technical responsibility on a basis of demonstrated competence or additional training.

ADDITIONAL INFORMATION - Local electronics industries, National Council of Technical Schools, 1507 M St. N.W., Washington 5, D. C.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

ELEVATOR
INSTALLER
ELECTRIC
(HYDRAULIC)

825.381-042

July,
1960

NATURE OF WORK - Elevator installers assemble and install elevators, escalators, dumb waiters, and similar equipment. The work is done by small crews (seldom more than six men) consisting of journeymen (skilled mechanics) and helpers... In elevator construction work, the crew first installs the guide rails of the car in the elevator shaft of the building. Then install the car frame and platform, the counterweight, the elevator chassis, and the control apparatus. Next, the car frame is connected to the counterweight with cables, the cab body and roof are installed, and the control system is wired. Finally, the entire assembly including cables, wires, and electrical control apparatus is carefully adjusted and tested... Modernization, maintenance, and repair are important parts of the work of elevator constructors.In maintenance and repair work, inspect elevator and escalator installations periodically and, when necessary, adjust cables and parts, and lubricate or replace parts. Alteration work on elevators is important because of the rapid rate of innovation and improvement in elevator engineering. This work is similar to new installation work because all elevator equipment except the old rail, car frame, platform and counterweight are generally replaced... In order to install and repair electrical, hydraulic, steam, or compressed air elevators, many of which are electrically controlled, must have a working knowledge of electricity, electronics, and hydraulics. Must also be able to repair electric motor and control and signal systems. Because of the variety of work, many different handtools and power tools are used.

OPPORTUNITIES

Current - Nationally, continued increase in the rate of employment growth for elevator constructors is expected during the 1960's as a result of construction expansion and modernization of old facilities. However, because of the small size of this occupation there will only be several hundred job openings annually for new workers in this trade. For up-to-date local information, contact unions, contractors, and local offices of the Ohio State Employment Service.

Trends - Technological advances in elevator and escalator construction will result in more work for these craftsmen. The modern, high-speed, complex elevators, with their automatic door openings and automatic leveling at floors, require more work and higher skill for the installation and adjustment of electrical and electronic controls.

FIELDS OF EMPLOYMENT - Most of the estimated 10,000 journeymen elevator constructors employed in mid-1958 worked for elevator manufacturers, doing new installation and modernization work and elevator servicing. Some elevator constructors are employed by small, local contractors who specialize in elevator maintenance and repair. Others work for government agencies or business establishments which do their own elevator maintenance and repair. Elevator constructors are also employed as elevator inspectors for municipal or other governmental licensing and regulatory agencies.

AREAS OF EMPLOYMENT - Concentrated in the highly industrialized and populated centers of the country.

REMUNERATION - 1958 survey of union minimum wages 52 large cities--$3.67 per hour. 1960 union rate in representative Ohio area--$3.73 per hour. Seasonal factors affect this trade much less than many of the other building trades.

METHOD AND REQUIREMENTS FOR ENTRY - Although elevator constructors are among the more highly skilled building craftsmen, training is comparatively informal and is obtained through employment as a helper for a number of years. The helper trainee must be at least 18 years of age, in good physical condition, and have a high school education or its equivalent, preferably including courses in mathematics and physics. Mechanical aptitude and an interest in machines are important assets.

Training - Generally, at least 2 years of continuous job experience, including 6 months' on-the-job training at the factory of a major elevator firm, is necessary to acquire a journeyman's skill. During this period, the helper must learn to perform all of the operations involved in the installation, maintenance, and repair of elevators, escalators, and similar equipment. The helper-trainee is generally required to attend evening classes in vocational schools. Among the subjects studied are mathematics, physics, electrical and electronic theory, and proper safety techniques. Opportunities for establishing an individually owned small contracting business in this field are very limited.

Union membership - Most elevator constructors are members of the International Union of Elevator Constructors.

WORKING CONDITIONS AND HAZARDS - Some work operations in elevator construction involve manual labor, but this is usually done by helpers. Also, much of the work must be done in cramped or awkward positions. The work is done indoors. Hazards include the danger of working in elevator shafts and those associated with the handling of electrical equipment.

ADDITIONAL INFORMATION - Local elevator manufacturers, unions, International Union of Elevator Constructors, 12 South 12th Street, Philadelphia 7, Pennsylvania.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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EMBALMER
338.381-010

Revised
May
1962

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Prepares the body for burial in conformity with State laws; washes body with germicidal soap; sews or seals lips shut and packs orifices with cotton; drains blood from body replacing it with embalming fluid; punctures internal organs to remove fluids and gases; closes incisions and dresses body; restores to natural appearance any features of the deceased damaged from accident or disease by use of molding wax, plaster of paris, or other material; applies cosmetics to face; places body in casket. May assist funeral director with other phases of funeral service.

OPPORTUNITIES

Current - Best opportunities for employment and advancement are available with larger firms, particularly to individuals possessing both embalmers and funeral directors licenses. There are enough apprenticeship openings throughout the State of Ohio to place students who will be graduating from the embalming schools in Ohio and surrounding areas. The majority of individuals entering the field today hold both embalmer's and funeral director's licenses.

Trends - The steadily increasing population and development of suburban areas will create some need for additional funeral homes and personnel to staff them. However, personnel needs of individual funeral homes may not be substantial. Many firms are staffed by members of owner's family.

For Women - Few women are employed in this occupation.

FIELDS OF EMPLOYMENT - On the staff of a funeral home. Ownership and operation of funeral home requires additional licensing as Funeral Director.

REMUNERATION - Varies according to size and type of community, location, and competitive conditions. Entry wage as an apprentice, $60 to $80 a week, plus room and board in some cases. In Ohio, licensed embalmers salaries range from $100 to $150 a week, plus room and board in some instances. An embalmer-funeral director usually receives more than the individual whose duties are limited to embalming only.

METHODS AND REQUIREMENTS FOR ENTRY

Training - Satisfactory completion of two years of academic instruction in a college or university recognized by the Ohio Department of Education—a liberal arts program to include a minimum of six semester hours in each of the following areas is advisable; Natural Science, Social Science, and English. Graduation from an accredited College of Mortuary Science offering a twelve (12) month course in embalming.

Technical courses usually include such subjects as: anatomy, pathology, bacteriology, chemistry, embalming, restorative art, mortuary law and related subjects. Registration with the Ohio Board of Embalmers and Funeral Directors is required prior to enrollment in a College of Mortuary Science. A one year apprenticeship to be served after examination and upon certification by the Ohio Board of Embalmers and Funeral Directors. Must assist in embalming at least twenty five (25) bodies during apprenticeship.

School Locations - In Ohio, Cincinnati College of Embalming, 3202 Reading Road, Cincinnati, Ohio. List of out-of-state approved schools may be obtained from the Ohio Board of Embalmers and Funeral Directors (address listed below).

Selection Factors - Personal qualifications should include a pleasant personality, neat appearance, dependability, confidence, patience, good health, physical stamina, emotional stability, good moral character, interest in science, sense of form perception and some degree of finger dexterity.

Licenses, Examinations - In Ohio the license is issued by the Board of Embalmers and Funeral Directors. Applicants are eligible for licensing if they are citizens of the United States, twenty one (21) years of age, of good moral character, and have satisfactorily completed the training requirements as listed above. An apprentice embalmers certificate is granted to those applicants passing the written examination administered by the Board of Embalmers and Funeral Directors. The apprentice embalmer is issued an embalmers license upon satisfactory completion of a one-year apprenticeship. Fees: $1.00 registration; $9.00 examination; $6.00 annual renewal for Ohio license. (Separate licenses are required for funeral director and embalmer.)

Equipment Required of Worker - Majority of funeral homes furnish instruments and other personal equipment for their employees. However some embalmers prefer to buy and use their own instrument kits.

WORKING CONDITIONS - Embalming rooms must be clean, sanitary, and well ventilated. While possibility of infection or contagion exists, observance of health precautions reduce hazards considerably. Hours may be long and irregular; in larger funeral homes, may work on a shift basis; in other firms, may be subject to call on a twenty four (24) hour basis.

AVENUES OF PROMOTION - Workers start as apprentices in the occupation. Promoted to staff embalmer upon receiving embalmer's license. Promotions to supervisory position, such as chief Embalmer, are dependent on size of establishment in which employed. Opportunities for ownership are greatly dependent upon availability of funds for investment and requirement of additional license as a Funeral Director.

FOR ADDITIONAL INFORMATION - Write or contact: Funeral Directors operating funeral homes in your locality; Board of Embalmers and Funeral Directors of Ohio, Wyandotte Building, 21 West Broad Street, Columbus, Ohio. Ohio Funeral Directors Association, 2720 LeVeque Lincoln Tower, Columbus 15, Ohio. Read: "Funeral Service as a Vocation" and "The History of American Funeral Directing," both published by National Funeral Directors Association, 135 West Wells Street, Milwaukee 3, Wisconsin; "The Vocation of Funeral Service," published by National Selected Morticians, Evanston, Illinois; "Funeral Directors and Embalmers," in Occupational Outlook Handbook, Bulletin No. 940, Bureau of Labor Statistics; "Funeral Directors and Embalmers," in Occupational Briefs published by Science Research Associates Inc., Chicago, Illinois.

# Employment Information Series

Written
May - 1966

## EMPLOYMENT SERVICE INTERVIEWER
166.268 (0-68.71)

NATURE OF THE WORK The primary responsibility of the employment interviewer in the Ohio State Employment Service is to find suitable positions for job applicants.

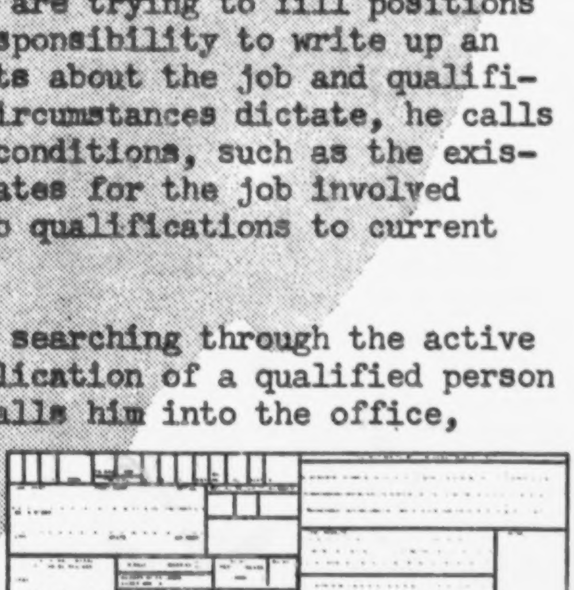
The interviewer initiates this placement action by first putting the applicant at ease and carefully reviewing his written application card. Through questioning, he learns and records more about the individual's vocational and economic interests, skills and abilities, physical capabilities, and personality traits. He also evaluates the person's education and employment history. When he has sufficient information about the applicant, he, in turn, provides general information concerning existing occupational opportunities or feasible courses of training; he also may inform the applicant of available public services, such as counseling, testing, training programs, and job corps.

Through interviewing techniques, the employment specialist may determine a need for a service other than direct placement. In this event, he refers the applicant to the proper Employment Service personnel.

To complete placement, the interviewer matches an applicant's qualifications with current job orders received from employers. If an individual is at his desk and the interviewer has a suitable job order, he is referred to the employer for an interview. Later, he contacts the employer to verify the results of the referral. When a referral is not given at the time of the interview, the application card is put on active file for subsequent job consideration. The interviewer performs job development for applicants who have outstanding training, experience, and/or potentialities in which specific employers are most likely to be interested. He also develops jobs for applicants when the office has no openings on file to which they can be referred.

Placement services also work for employers who are trying to fill positions in their organizations. It is the interviewer's responsibility to write up an employer's job order—recording all significant facts about the job and qualifications required of the prospective employee. As circumstances dictate, he calls the employer's attention to pertinent labor market conditions, such as the existence of shortage occupations and prevailing wage rates for the job involved (this information helps the employer in relating job qualifications to current economic conditions).

The interviewer attempts to fill job orders by searching through the active file of applications mentioned above. When the application of a qualified person is located in the files, the placement specialist calls him into the office, determines his interest in and suitability for the job, and, if such is indicated, refers him to the employer for an interview. If there are no qualified individuals on file, the job order may be transmitted to other Employment Service offices for possible placement.



Working with his supervisor and usually by telephone, the interviewer maintains a system of employer contacts whereby he explains and promotes the use of the various programs available through the Employment Service.

All of these placement activities are recorded and tallied.

The placement specialist works closely with other Service personnel, such as test examiners and vocational counselors; their duties are often interrelated. In performing his duties, the interviewer uses a variety of occupational reference tools, the most important being the Dictionary of Occupational Titles which defines and codes the functions of workers.

In large offices the interviewer may be given a special assignment such as screening applicants for public training programs. In small offices the interviewer may, in addition to his regular duties, function as a receptionist.

## OPPORTUNITIES

Current There is always a demand for qualified personnel. Positions are continuously opening up throughout the state.

Trends Opportunities will rise at a moderate rate during the remainder of the 1960's and beyond. The factor behind this is the labor market's anticipated increase in size and complexity which naturally will result in intensified utilization and development of public employment services.

Women Opportunities for women are good. There are no discriminations concerning either employment or advancement.

FIELDS OF WORK Interviewers are employed throughout the state in sixty-six local offices, eight youth offices, and twenty-four branch and itinerant offices.

AREAS OF EMPLOYMENT There are approximately 250 interviewers in the Ohio Bureau of Unemployment Compensation. Women comprise between 55% and 60% of this number. The greatest concentrations of workers are in the Cleveland, Columbus, and Cincinnati local offices.

REMUNERATION On the basis of training and experience, interviewers may be classified as Employment Security Specialists I, II, or III. The current Ohio pay range for these classifications is as follows: I, $380-$460 a month; II, $420-$500; III, $460-$550.

Benefits include two weeks' paid vacation after one year of service. The employee also participates in medical and life insurance programs and a state retirement pension plan.

## REQUIREMENTS FOR ENTRY

Selection Factors emotional stability and maturity, ability to meet and deal with people, desire to help people, tact, patience, ability to speak easily and effectively, good or corrected eyesight and hearing, good hand dexterity

High School Education A general college preparatory curriculum, including courses in the social sciences and English, is advisable.

Any summer or part-time job involving a great deal of contact with people will help the student to gauge his interest in this field. Specific job examples are leaders in parks or recreation centers, volunteer hospital aides, and sales clerks in stores.

College Education and Experience To secure a position as an Employment Security Specialist I, at least three years' college education in one of the following fields is necessary: social sciences, psychology, statistics, business administration, or vocational guidance and counseling. This may be substituted by two years' experience in personnel or claims work, interviewing, placement, or job analysis or any other equivalent combination of training and experience.

The ES Specialist II classification requires graduation from college with a major in one of the above-mentioned fields. Three years' responsible experience in claims work, employment services, or occupational testing or any other equivalent combination of training and experience may be substituted for this.

The ES Specialist III must have a college degree in one of the above-mentioned fields plus a year of responsible experience in claims work, employment services, occupational testing, or counseling. Four years' similar work experience or any other equivalent combination of training and experience may be substituted for this.

WORKING CONDITIONS Interviewers work eight hours a day forty hours a week.

This is sedentary work performed in an office. Surroundings are generally clean and comfortable; many offices are air-conditioned.

PROMOTION POSSIBILITIES Depending on individual ability and experience, promotions may be made to: staff positions, such as veterans employment representative or inter-group advisor; supervisor of a placement unit; supervisor of placement services in the local office; local office manager; and administrative posts in the central office.

PLACEMENT SERVICES Contact the Ohio Department of Personnel, the personnel department of the Bureau of Unemployment Compensation, or the professional placement unit of the local BUC office. Openings are filled through civil service tests.

SOURCES OF ADDITIONAL INFORMATION National Employment Association, 260 Southfield Road, Detroit 29, Michigan; Bureau of Employment Security, U.S. Department of Labor, Washington 25, D.C.; Public Personnel Association, 1313 East 60th Street, Chicago, Illinois 60637.

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Bureau of Unemployment Compensation

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## FIREMAN

373.884-014

Revised
February
1963

NATURE OF THE WORK - Uses his knowledge and skills in protecting the public against fire, preventing loss of life, and minimizing property damage. Will be assigned one or more of the following tasks in fighting fires: a) drive fire truck, b) unreel, connect and operate water hose, c) turn on water hydrant, d) erect and move ladders, e) operate pumping equipment, f) make forcible entry using axes, crowbars, etc., g) administer first aid, and h) inspect premises to insure no further danger exists. Other duties will include the prevention of fire, through public instruction and inspection of public properties for possible fire hazards; emergency rescue; inspection, testing, and maintenance of fire fighting equipment and fire station premises. Will participate in practice drills, listen to lectures on new methods of fire fighting, and study fire manuals and textbooks. May stand watch at fire alarm instruments, verifying and recording alarms received.

OPPORTUNITIES

Current - The majority of positions available, at the present time, have developed from the need to replace those who retire, die, or leave the occupation for other reasons. A few openings will arise with the enlargement of present staffs and the development of new fire departments. There is usually a larger number of qualified applicants than job openings, due to the stability of this occupation.

Trends - There will be a moderate increase in the number of positions during the 1960's. The growth in population, expansion to suburban areas, and the increase in building construction will create a need for firemen. This need will be counter-balanced somewhat by improved fire fighting techniques and equipment, scientific advancements, efforts to utilize fire prevention methods, urbanization, and the increased use of fire resistant building materials.

FIELDS AND AREAS OF EMPLOYMENT - Employed by all city civil service commissions. A few are employed by government establishments and private industries.

REMUNERATION - The entrance salary for firemen ranges from a low of $3,480 a year, in some small villages or towns, to a high of approximately $5,520 per year in large metropolitan areas. The average beginning salary is $4,590 a year. The majority receive periodic increases until they reach the maximum of their salary schedule. The fire chief's salary ranges from $4,080 to $14,658 per year. All salaries are dependent upon the size of the community and the amount of money allocated by the local government for protective service occupations. Most fire departments furnish or provide allowances for protective fire fighting clothing. May provide the same service for firemen's dress uniforms. Extra benefits include: paid vacations, liberal retirement plans, generous provisions for sick leave, and paid or compensatory time for holidays.

## REQUIREMENTS FOR ENTRY

General - Must be a citizen of the United States, possess a valid Ohio vehicle operator's license, and pass a written intelligence test. The minimum age requirement is 21, the maximum age varies but is usually 31. Meet certain height and weight standards as established by the local civil service commission. Desirable qualities include: mechanical aptitude, courage, resourcefulness, mental alertness, industriousness, and emotional stability.

Education - Must be a high school graduate or its equivalent. Will receive several weeks of formal or on-the-job training before assignment to a fire fighting team. Instruction is combined with practice drills related to the fundamentals of fire fighting. Training will include: rescue work, forcible entry, first aid, operation and maintenance of equipment, fire department rules and regulations, and techniques of fire prevention.

Physical - Must pass a rigid physical examination and athletic performance test as specified by local civil service regulations.

WORKING CONDITIONS - The majority of firemen in smaller towns work a 72 hour week; on 24 hours, off 24 hours with an additional day off at intervals. Many of the firemen in larger cities work a 56 hour week. Will work indoors, out-of-doors, and under varying weather conditions. Will be exposed to flames, smoke, falls, cave-ins, etc. May be subjected to poisonous or flammable gases and chemicals while fighting industrial fires.

AVENUES OF PROMOTION - Workers may be promoted from the position of fireman to lieutenant, captain, battalion chief, deputy or assistant chief, and chief. Opportunities for advancement depend upon the fireman's work performance, and his rating on promotional examinations. Personal qualifications valuable to those being considered for promotion include: leadership qualities and good judgment.

SOURCES FOR ADDITIONAL INFORMATION - Write or contact: local civil service commission or fire department, local Ohio State Employment Service, and the International Association of Fire Fighters, 815 16th Street, NW., Washington 6, D.C. Read: "Fireman", Occupational Outlook Handbook, United States Department of Labor, Washington 25, D. C.

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service

## FORESTER

040.081-038

Revised
July
1963

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Develops and manages forest lands for effective utilization of their resources. Responsible for all natural resources and activities in a specified area; including, recreational facilities, wildlife, grazing lands, water, and timber. Makes use of various methods in protecting and controling the forest against destructive insects and other pests, forest fires, and diseases. Will perform the following duties to assure the continuous production of forest products; measure, survey, and appraise the value of timber lands; plan and supervise the harvesting of forest crops; and conduct timber sales. Will manage and develop grasslands; take steps to prevent erosion and preserve vegetation; and improve forest area by reforestation, revegetation, fencing, and stabilizing watershed conditions. Plans, designs, and supervises the building of recreational facilities, forest trails, roads, lookout towers, ranger stations, and telephone lines. Because of the wide range of activities, numerous specialties have developed; such as, wood technology, forest engineering, wildlife, timber, or range management, reforestation, watershed or forest protection, harvesting forest products, recreation work, and forest administration. May also specialize in research, editing and writing, extension work, and teaching at university level.

OPPORTUNITIES

Current - Openings for qualified individuals are always available. There is a particular need for personnel to teach and do research. The majority of openings will come with the development of new positions, a few will occur with the need to replace those who die, retire, or leave the occupation for other reasons.

Trends - It is anticipated that the following factors will influence the need for foresters: a) the growing population and rising living standards will increase the demand for lumber, paper, and other major forest products. b) the development of new uses for wood and wood fibers. c) the public's demand for additional recreational facilities, etc. Greater utilization of public and privately owned forests will be required to fulfill these needs.

For Women - Opportunities are and will probably continue to be limited, largely because of the necessary field work, much of which is rigorous and in isolated places. Employment is mainly in research.

FIELDS AND AREAS OF EMPLOYMENT - The majority of foresters are employed in private industry, primarily in pulp, paper, and lumber companies. The next largest employer is the state and federal government. Here, the forester may work in the Forest Service, Fish and Wildlife Service, National Park Service, Soil Conservation, or Department of Natural Resources. Some are in business for themselves as forest management consultants, forest products brokers, forest owners and managers, and forest industry operators. Other areas include employment in forest associations, extension work, teaching, research, wholesale and retail sales, and local government.

REMUNERATION - In industry the beginning salary for foresters with a bachelor's degree and no experience ranges between $400-$500 per month. Individuals with a master's or doctorate degree will receive higher starting salaries. The majority of those employed in State Civil Service receive starting salaries of $400 per month and more. With five to ten years of experience in this field the individual will be earning $550 to $800 per month, depending upon interests, abilities, and willingness to work. Those employed by the federal government receive starting salaries ranging from $4,565 a year, for recent graduates with a bachelor's degree, to $5,540 for those with an additional year of forestry experience or one year of graduate study. Individuals with a doctorate degree will begin at $6,675 per year. Foresters in top administrative positions may earn from $12,000 to $20,000 or more a year.

REQUIREMENTS FOR ENTRY

General - Should possess initiative, imagination, courage, stamina, integrity, scientific curiosity, sense of humor, above average intelligence, good physical and mental health, and the necessary interests and aptitudes for this type of work. Capable of managing, planning, and developing forestry programs; and the desire to understand and solve mathematical and natural science problems. Able to get along well with others and a willingness to assume the responsibility of this vocation.

Education - The minimum requirement is usually the completion of an approved four year curriculum in forestry at a school of forestry accredited by the society of American Foresters. It is possible to enter this vocation with professional training in a related speciality; such as, horticulture, botany, and agronomy, however, opportunities for advancement outside of this allied field will be very limited. Basic educational work includes courses in the sciences, engineering, economics, and the humanities. Some of the specialized professional subjects the forester will study in college include: silviculture, forest measurement, forest management, forest economics, forest products industries, and forest protection. It is highly desirable for the student to obtain some practical field experience. Some colleges may require their students to spend one summer in a camp operated by the college. There are 28 colleges in the United States that are accredited by the Society of American Foresters. Accredited schools nearest Ohio are Michigan College of Mining and Technology, Michigan State College, University of Michigan, Pennsylvania State University, Purdue University, and West Virginia University. Ohio State University offers a two year program in forestry which is transferable to an accredited school.

WORKING CONDITIONS - Must spend considerable time out-of-doors under all kinds of weather conditions. May spend additional hours in traveling or emergency duty, such as fire fighting. Young foresters in beginning positions are likely to have their headquarters shifted frequently. The work may be rigorous and in isolated areas.

AVENUES OF PROMOTION - Will probably begin as a forest ranger, field assistant, or research assistant. May advance along the following lines: junior forester -- district forest ranger -- staff officer -- assistant forest supervisor -- forest supervisor. Professional advancement depends upon several factors including education, ability, and experience.

ADDITIONAL INFORMATION - Contact a forester and discuss with him the particular field in which you are interested. Write or contact: Department of Horticulture and Forestry at Ohio State University; Society of American Foresters, 425 Mills Building, 17th and Pennsylvania Avenue, N.W., Washington 6, D. C.; Forest Service, U. S. Department of Agriculture, Washington 25, D. C.; State Forestry Agency, Division of Forestry, State Department of Natural Resources, 1500 Dublin Road, Columbus, Ohio; Central States Forest Experiment Station, 111 Old Federal Building, Columbus 15, Ohio.

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

FOUNDRY
INDUSTRY

## INDUSTRIAL RELEASE

NATURE OF THE WORK - The different types of foundries produce castings made of gray iron, steel, malleable iron, and nonferrous metals. Five principal casting methods are used, based on the different types of molds. The most common method is green sandcasting. Sand composed chiefly of silica and clay is packed (in a container called a flask) around a pattern (a model of the object to be cast.) Since the completed mold is made in several sections, it can be taken apart to permit withdrawal of the pattern, thus leaving a hollow cavity into which the molten metal is poured to form the desired shape. The sand mold can be used only once.

Permanent molding employs a metal mold which can be used many times, and is used chiefly for casting nonferrous products.

Precision investment casting (the "lost wax" process) utilizes ceramic molds. A wax or plastic pattern is coated with refractory clay. After the coating hardens, the wax is melted and drained out leaving a mold cavity into which casting metal is poured. Castings obtained from these molds are very exact and need little machining

In shell molding, a post World War II development, resin-bonded sand shells made from master metal patterns replace green sand molds. Advantages include greater precision, good surface finish of the casting, and lower unit cost in quantity production.

Die casting, a separate and distinct process, is not covered here.

MAJOR OCCUPATIONS WITHIN THE INDUSTRY - Molders, Chippers and Grinders, Coremakers, Melters and Pourers, Pattern Makers, Shakeout Men, Castings Inspectors. Occupations not peculiar to foundries--maintenance mechanics, machinists, carpenters, millwrights, crane and derrick operators, truck drivers, machine tool operators, administrative and technical personnel.

OPPORTUNITIES

Current - 7000 to 10,000 openings annually are expected during the 1960's to replace experienced workers who retire, die or transfer. However, foundry employment fluctuates sharply in response to business conditions.

Trends - Long range prospects are for a relatively large increase in foundry production. However, continued advances in casting methods and the increasing use of machinery for materials handling will result in greater output per worker, meaning foundry employment will increase at a much lower rate than foundry production.

## FOUNDRY INDUSTRY

Growth of individual occupations - Direct process workers such as hand molders and hand coremakers, little increase; maintenance workers and operators of material-moving machines, some increase; laborers and other unskilled workers, deline; technical personnel, increase.

Women - Chiefly employ in office jobs.

Non-white - Considerable number of Negroes working as skilled molders and coremakers--they comprise 1/3 of the plant workers in foundries holding both skilled and unskilled jobs.

FIELDS OF EMPLOYMENT - Generally, castings are produced in small and medium size shops. Two-thirds of foundry workers are employed in independent foundries--one-third in foundries operating as departments of plants using the castings for their own products.

AREAS OF EMPLOYMENT - Nation-wide, state-wide. Leading States--Ohio, Michigan, Pennsylvania, Illinois and Indiana.

REMUNERATION - In April, 1959, iron and steel foundry production workers were earning an average of $98.17 a week or $2.43 an hour (including pay for overtime and night work). In nonferrous foundries the average was $96.05 a week or $2.41 an hour.

REQUIREMENTS FOR ENTRY - High school students considering a foundry career should take mathematics, sciences, mechanical drawing and machine shop courses. Vocational or technical school students should take these courses plus foundry practice and patternmaking if possible. The beginning worker starts as a laborer and, after receiving informal on-the-job training from a foreman or experienced worker, gradually learns how to perform the more skilled jobs. This is the usual practice in training workers for such direct casting process jobs as melter, chipper and grinder and frequently is used in the craft maintenance occupations such as machinist or electrician. The majority of skilled foundry workers -- particularly hand molders, hand coremakers, and patternmakers--learn their jobs through formal apprenticeship. In this type of training, the young worker is given supervised on-the-job training for 3 to 5 years, supplemented by classroom instruction. A worker who has completed an apprenticeship program is usually preferred by foundry management because of his greater versatility and his increased potential for supervisory jobs.

Union membership -The large majority of foundry workers are union members belonging to one of the following labor organizations: International Molders and Foundry Workers Union of North America; the United Steelworkers of America; or the International Union, United Automobile, Aircraft and Agricultural Implement Workers of America. Nearly all of the patternmakers are members of the Patternmakers League of North America.

WORKING CONDITIONS AND HAZARDS - In some foundries, particularly the older unmechanized shops, safety and comfort are below average for factory work, generally. In many of the newer foundries, working conditions have been improved by reducing the heat, fumes, smoke and noise that are part of foundry operations. The injury frequency rate in foundries tends to be relatively high compared with other manufacturing industries, but it has been going down steadily. Patternmaking and coremaking have the lowest injury rate; molding has a somewhat higher rate. Jobs in melting and chipping tend to have the highest injury rates.

ADDITIONAL INFORMATION - Local foundries, American Foundryman's Society, Golf and Wolf Streets, Des Plaines, Illinois.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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FUNERAL
DIRECTOR
187.168-026

Revised
May
1962

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Arranges and conducts funerals; interviews family for information about deceased; aids in planning details such as filing death certificates, securing burial permits, publishing obituary; assists family with selection of burial clothes, casket, flowers and lights in room where service is to be held; may arrange for and provide services of clergyman; arrange transportation when necessary.

OPPORTUNITIES

Current - Nationally, need for approximately two thousand students a year. At present accredited colleges are supplying approximately half the total personnel needed in funeral homes throughout the nation. Field is highly competitive in some areas of the State of Ohio. Best opportunities for employment and advancement are available with larger firms. Particularly to individuals possessing both embalmer's and funeral director's licenses.

Trends - The need for additional personnel in this field will continue to grow with the steadily increasing population. In addition, normal personnel turnover will create some opportunities each year. Development of suburban areas will create new needs for funeral homes.

For Women - Limited number of women in this occupation. Most are wives or daughters of funeral directors.

FIELDS OF EMPLOYMENT - Large metropolitan funeral homes; branch and suburban establishments; self employment or partnership in smaller communities.

REMUNERATION - Varies according to size and type of community, location, competitive conditions, duties and managerial responsibilities.

Probable Entry Wage - As apprentice, $60 to $80 a week, plus room and board in some cases.

Reasonable Expectation of Earnings - Salaries for licensed Funeral Directors in Ohio vary from $100 to $200 a week. In general, earnings are higher in larger cities; for owners, operating expenses are also higher.

METHODS AND REQUIREMENTS FOR ENTRY

Selection Factors - Personal qualifications should include a pleasant personality and neat appearance; patient, tactful, understanding, and sympathetic attitude; interest in and consideration for others; good moral character; good health; emotional stability; physical stamina; appreciation of religious customs.

Training - Satisfactory completion of two years of academic instruction in an accredited college or university. A liberal arts program to include one year of English is advisable. This may be followed by twelve (12) months of mortuary science training and a one year apprenticeship served under the supervision of a funeral director licensed in Ohio; or in lieu of the mortuary science training, a two year apprenticeship to be served under a licensed funeral director. During this period apprentice must assist his director in conducting at least twenty five (25) funerals. A one year apprenticeship term for embalmers and funeral directors may be served concurrently provided each apprenticeship is properly certified.

School Locations - In Ohio, Cincinnati College of Embalming, 3202 Reading Road, Cincinnati, Ohio. List of out-of-state schools approved by Ohio may be obtained from Board of Embalmers and Funeral Directors or Ohio Funeral Directors Association (address listed below).

Licenses, Examinations - Forty-one states require that funeral directors be licensed. In Ohio the license is issued by the Board of Embalmers and Funeral Directors of Ohio. Applicants are eligible for examination if they are citizens of the United States, twenty one (21) years of age, of good moral character, have satisfactorily completed the training requirements as listed above, and have registered with the Board before serving apprenticeship. Licenses are granted to those passing the written examination.
Fees: Registration - $1.00; examination - $9.00, annual renewal for Ohio license - $6.00.

Equipment Required - To operate one's own funeral home requires an initial expenditure for real estate, building, furnishings, cars, hearse, ambulances, operating room equipment, and additional supplies. Ownership also requires a sufficient amount of working capital to meet high operating expenses.

WORKING CONDITIONS - Funeral homes are usually attractive, clean, well kept. Hours may be long and irregular; funeral directors are often subject to call twenty four (24) hours a day. Work involves exposure to weather and heavy lifting. While possibility of infection or contagion exists, observance of health precautions has reduced hazards.

AVENUES OF PROMOTION - Workers start in occupation as apprentices. May be promoted upon obtaining Funeral Director's license to positions such as Assistant Funeral Director. Possibilities of promotions to managers or supervisors depend on size and nature of establishment in which employed. Ownership is greatly dependent on availability of funds for investment.

FOR ADDITIONAL INFORMATION - Write or contact: Funeral Directors operating funeral homes in your locality; Board of Embalmers and Funeral Directors of Ohio, Wyandotte Building, 21 West Broad St., Columbus, Ohio; Ohio Funeral Directors Association, 2720 LeVeque Lincoln Tower, Columbus, Ohio. Read: "Funeral Service as a Vocation" and "The History of American Funeral Directing," both published by National Funeral Directors Association, 135 West Wells St., Milwaukee 3, Wisconsin; "The Vocation of Funeral Service," published by National Selected Morticians, Evanston, Illinois; "Funeral Directors and Embalmers" in Occupational Outlook Handbook, Bulletin No 940, Bureau of Labor Statistics; "Funeral Directors and Embalmers" in Occupational Briefs published by Science Research Associates, Inc., Chicago, Illinois.

# EMPLOYMENT INFORMATION SERIES

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## FURRIER II

142.081-058

Revised
October
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Designs, alters, repairs, cleans, blocks, cuts, sews and finishes fur garments such as coats, jackets, neck pieces, muffs, hats, etc., using special equipment, including an air pistol, demothing tank, fur-sewing machine, fur cleaning machine, and felling machine (sewing machine used for attaching cotton staying cloth to hide side of fur for reinforcement). May be called upon to estimate repair costs, and to buy and sell furs. The variety of duties depends on the plant, industry, or locality in which the work is done.

**OPPORTUNITIES**

**Current** - Very slight. On a local basis, openings occur from time to time, but experienced workers are preferred since apprenticeship is costly for the employer and investing in a non-experienced worker carries the risk that he may not complete this training.

The character of the fur business has changed during the last 10 years, due to the many modern conveniences available today. The utilitarian function of a fur coat has been replaced by the decorative or luxury function of furs--more often seen in fur accessories.

**Trends** - No expansion of the fur business is in sight except to meet the normal demands of a growing population. Generally, the fur shops which keep up with the latest fashions will have the greatest chance to do a profitable volume of business.

**For Women** - Chiefly used in the finishing aspects of the trade, particularly in lining needle work.

**Seasonal Factors** - The peak load occurs during the spring and summer months when furs are brought in for repairs, alteration, and storage.

**FIELDS OF EMPLOYMENT** - Department stores, fur storage concerns, retail fur shops, wholesale fur garment manufacturing.

**AREAS OF EMPLOYMENT** - The industry is concentrated in larger northern cities where fur garments are more extensively worn. The center of the trade is New York City.

**REMUNERATION** - $100 a week is considered a good wage for an experienced furrier in Ohio, though this figure may vary from city to city. This is the average for a first-class furrier working a 52-week year, up to 48 hours per week in peak seasons and 40 hours a week in off-seasons. Salaries for experienced workers have gone up slightly in recent years to keep the best men from leaving key positions. This has been made necessary by the lack of apprentices coming into the business. The $100 a week figure is exceeded by furriers in supervisory positions, in most cases. In shops accepting apprentices, only a bare minimum is paid, since it is felt that the apprentice is a liability until trained.

METHOD OF ENTRY - The wisest course of action is to take trade school courses in this occupation in New York City. Opportunities for on-the-job training are very limited. Where apprenticeship does exist, the training period generally lasts 3 years.

REQUIREMENTS FOR ENTRY - Work in retail establishments calls for the ability to meet and be tactful with people. Skill in needle trades is essential--keenness of vision is important. Finger dexterity and the ability to work rapidly for long periods of time are also necessary.

WORKING CONDITIONS AND HAZARDS - Work is indoors, with and around others. Furrier is exposed to sudden temperature changes from going in and out of fur storage vaults, and runs the risk of cuts resulting from the use of sharp knives.

AVENUES OF PROMOTION - On the basis of training, work experience and seniority, may become a supervisor.

ADDITIONAL INFORMATION - See local furriers and union locals.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT
# INFORMATION
# SERIES

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Ohio State Employment Service

## GEOLOGIST

024.081-018

Revised
Dec.
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Studies the structure and history of the earth as disclosed rock formations on and under the earth's surface and by fossil remains of animal and plant life. Searches for minerals and fuels and studies the physical processes by which changes in the earth's structure and surface features take place.

Often spends a large part of his time in field work, exploring areas to determine the underground structure of the earth and the kinds of minerals or rocks that may be discovered there. May study rock cores and cuttings brought up by drills, examining fossils, collecting geological specimens, and recording data in notebooks or on working maps and aerial photographs. Also spends considerable time in the laboratory (some geologists spend most or all of their time in the laboratory), examining geological specimens, usually with a microscope, and doing other research. May perform administrative functions. When employed by a college or university, may combine teaching with research and administrative work.

Usually specializes in one branch of the science. Economic geologists find and develop mineral resources. Petroleum geologists locate accumulations of oil and gas. Engineering geologists provide geological information in support of engineering projects, such as the construction of tunnels, airfields, and dams. Ground-water geologists study the sources, amount, and quality of water under the earth's surface which is available for agriculture, industry, and homes. Paleontologists identify and classify animal and plant fossils. Stratigraphers study the arrangement and relationships of rock layers forming the earth's crust. Petrographers study rocks, their origin, and composition. Mineralogists are concerned with minerals, their genesis, the ways of classifying them, and how to distinguish them from each other.Geomorphologists are concerned with land forms and with agents--erosion, glaciation sedimentation, etc.--which cause changes in the landscape. Structural geologists study the structure of rocks and the physical processes which have lead to their deformation.

**OPPORTUNITIES**

**Current** - Good for those with doctor's degrees, fair for those with master's degrees, and poor for those with only the bachelor's degree. However the bachelor's degree is often an appropriate background for employment in other fields.

**Trends** - Increasing demand for mineral and water supplies at home and abroad; more extensive U. S. Geological Survey work; increased activity in construction fields; and expanding college enrollments, will all create needs for geologists, particularly for those with advanced training.The trend is toward a more scientific and quantitative approach, with more laboratory work and less field work available.

**For women** - Few women are currently employed as geologists and opportunities in field activities will continue to be limited because of the rigorous nature of the work. Well qualified women will be able to find positions as teachers in colleges and universities. Others trained in certain specialties will be able to obtain laboratory positions in industry and Government. Most numerous laboratory openings are in mineralogy, petrology, geochemistry, geophysics, and paleontology.

FIELDS OF EMPLOYMENT - About three out of four geologists work for private industry with the great majority employed by petroleum and natural gas companies. The next largest number is employed by the Federal Government, colleges and universities, and by State government agencies. Some geologists work for independent consulting firms, or are individual consultants themselves.

AREAS OF EMPLOYMENT - Concentrated in Texas, Oklahoma, Louisiana, and California. There are also opportunities in nearly all other States and in foreign countries. A large share of new employees will be hired for foreign work.

REMUNERATION - Average starting salary for new geology graduates with bachelor's degree and no experience is about $500 a month in the petroleum industry if an openings can be found. Those with Master's degrees, $550-$600; those with Doctor's degrees, $650-$750. Supervisory and administrative jobs in industry, $12,000-$20,000; successful consultants, $30,000 and up. See Civil Service announcements for Government scales.

METHOD OF ENTRY - A four-year college leading to a bachelor's degree with a major in geology, and graduate training in geology and in related sciences is required for an ever-increasing number of jobs. Undergraduate training should include physics, chemistry, mathematics, and in some specialties, biology, as well as geology courses. About 1/4 of undergraduate study is devoted to geology courses; about 1/3 to related natural sciences and mathematics, and the remainder to general studies. The ability to write clearly is absolutely necessary at all levels of geological work.

REQUIREMENTS OF ENTRY - At least a bachelor's degree with thorough scientific training and extensive laboratory and summer field work. One year's experience in the field is commonly necessary to be placed in a professional position; many large oil companies have formal training programs to acquaint the beginner with their operations.

A student planning a career in geology should have an aptitude for science, mathematics, and writing expression; like outdoor activities and have at least average physical stamina.Willingness to travel is also important.

For a list of Ohio colleges and universities offering a major in geology, see Part V, Training Directory, Employment Information Series.

WORKING CONDITIONS - In early stages of career, extensive travel likely with absence from home considerable periods of time. Hours of work uncertain because of weather conditions. On rare occasions, exposure to landslides, falling rocks, and in mines, "choke damp" or gas.

AVENUES OF PROMOTION - Generally starts as a field assistant on an exploration party. Post-graduate training is extremely helpful in advancement. Administrative and executive work are the function of an increasing number of geologists in the petroleum and mining industries.

ADDITIONAL INFORMATION - American Geological Institute, 2101 Constinution Ave. N.W., Washington, D. C. Consult local colleges and universities.

# EMPLOYMENT INFORMATION SERIES

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## GEOPHYSICIST

024.081-038

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Feb.
1961

## OCCUPATIONAL RELEASE

NATURE OF WORK - Applies the principles of physics to the planet on which we live and its environment in space. Covers problems relating to outer space and cosmicterrestrial relationships; and to the core of the earth. Specializes in one particular phase, since the field is so broad. The American Geophysical Union recognizes eight specific fields: geodesy; seismology; meteorology; geomagnetism and aeronomy; oceanography; volcanology, geochemistry and petrology; hydrology; and tectonophysics. Uses highly complex precision instruments such as the seismograph, which measures the transmission of vibrations through the earth's interior; the magnetometer, which measures the magnetization of different kinds of rocks; and the gravimeter, which measures the pull of gravity.

Hydrologists study the occurrence, behavior, and disposition of water in all its forms on and in the land areas of the Earth.

Oceanographers not only chart oceans but study the science of oceans, the ocean bed, the beaches, the estuaries, and all aspects of the ocean in its relationship to the rest of the Earth.

Seismologists study earthquakes (natural and man-made), and the transmission of vibrations through the earth's interior.

Geodesists study the shape and size of the Earth, its mapping, its gravity field, both with respect to the solar system, and with regard to variations from place to place on the Earth because of variations in the structure of the adjacent or underlying Earth masses.

Volcanologists are concerned with the origin, location, and activities of volcanoes, hot springs, and similar phenomena, and with the genesis of igneous rocks.

Geomagneticians study magnetic and electrical processes in and about the earth; including such phenomena as sunspots, the aurora, and the transmission of radio waves.

Meteorologists study the physical processes in the atmosphere and their effect upon the related processes in the ocean, and the land areas of the Earth. (See separate release on meteorologists.)

Tectonophysicists is the study of the crust of the Earth and the properties of crustal materials.

Exploration geophysicists are a functional group, frequently referred to separately, who use one or more of the techniques outlined above in exploring for mineral or oil deposits.

OPPORTUNITIES

Current - Listed as a "demand occupation" by the U. S. Department of Labor.

Trends - Increasing use of new developments is expected. The use of electronic means for measuring long distances will permit more accurate mapping of the Earth. Artificial satellites will contribute information on variations in the gravitational field and will help determine the exact location of points on Earth. Nuclear test detection techniques will increase. Rockets and artifical satellites will help determine atmospheric properties. Development of ocean resources will increase. Water supply problems will demand practical solutions while important theoretical developments are expected soon. Study for resources within the Earth will continue according to need—for instance, proven oil reserves appear to be sufficient to meet prospective needs at the present time so there is a temporary lull in this activity.

**For Women** - Opportunities mostly limited to offices, laboratories, or teaching.

**FIELDS OF EMPLOYMENT** - About one-half work for private industry—chiefly, the petroleum industry. Two-fifths work for the Federal Government. Remainder, colleges and universities, state governments, private research institutions, and independent consulting firms.

**AREAS OF EMPLOYMENT** - In private industry, mainly in the southwestern and western sections of the United States. Also, American firm prospecting in foreign countries.

**REMUNERATION** - Federal pay scales, from $5335 to $13,950, depending on amount of graduate education and experience. Private industry salaries generally exceed those of the Government. Educational institutions pay the lowest—but offer the advantage of long summer vacations during which basic salaries may be supplemented by consulting, writing, and research work.

**ENTRY METHODS AND REQUIREMENTS** - An aptitude for and interest in mathematics and the physical sciences, average physical stamina, and in the case of emploration work, willingness to travel are necessary.

Only 14 institutions offer training leading to a bachelor's degree in geophysics, and this chiefly in exploration. The geophysics major is neither necessarily the best nor the only way to enter the field. Some students take undergraduate training in engineering geology and petroleum geology. Others combine geology, mathematics, and physics. Basic disciplines in these last three subjects is most important, regardless of which method is used.

For geophysical specialties other than geophysics, graduate training is ordinarily needed. Extensive undergraduate work in science and mathematics plus on-the-job training may be sufficient in some cases. Graduate degrees are increasingly important for consideration for the most desirable positions.

For information regarding scholarships offered by the Society of Exploration Geophysicists, write their Scholarship Committee, Box 1536, Tulsa, Oklahoma.

New graduates with bachelor's degrees who are hired for geophysical work in industry or Government are usually given on-the-job training in the application of geophysical principles to the projects of the particular employing agency.

**WORKING CONDITIONS** - Duties, particularly for beginners, often require prolonged absences from home. Work schedules are usually irregular and hours are frequently determined by travel, weather conditions, and the requirements of field activities.

**AVENUES OF PROMOTION** - Dependent on education, training, and demonstrated ability. Some reach supervisory and administrative positions.

**ADDITIONAL INFORMATION** - American Geophysical Union, 1515 Massachusetts Ave. N.W. Washington 5, D.C. Society of Exploration Geophysicists, Box 1536, Tulsa, Oaklahmoa; local colleges and universities.

**NOTES** - (Local opportunities, etc.)

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

GLAZIER

865.781-010

July, 1960

## OCCUPATIONAL RELEASE

NATURE OF WORK - Cuts, fits, and installs plate glass (for store windows), ordinary window glass, mirrors, and special items such as preassembled stained glass or leaded glass panels. In making a glass installation, first cuts glass to size. Puts a bed of putty into the wood or metal sash and presses the glass into place. Fastens the glass with wire clips or triangular metal points and then places and smooths another strip of putty on the outside edges of the glass to keep out moisture. When installing structural glass, which is used to decorate building fronts, walls, ceilings, and partitions, the glazier (and sometimes the marble setter) applies mastic cement to the supporting backing and the glass is pressed into it. May trim glass with a glass cutter if it is not precut to specifications. The glazier (as well as the bricklayer) installs glass blocks for building exteriors, interior partitions, and walls. In addition to handtools, such as glass cutters and putty knives, uses power cutting tools and grinders.

OPPORTUNITIES

Current - Nationally, only a few hundred openings annually are expected during the 1960's. For up-to-date information locally, contact local unions, contractors, and the Ohio State Employment Service local offices.

Trends - Glaziers should be kept busy due to the anticipated large expansion of construction activity, the increasing use of glass in modern buildings, and extensive replacement and modernization work.

FIELDS OF EMPLOYMENT - In 1958 a few thousand glaziers were employed by glazing contractors on new construction, alterations and modernizations, and replacement of broken glass, particularly for store windows. Others were employed by government agencies or business establishment doing their own construction work. Many glaziers were employed in factories where they install glass in sash, doors, mirrors, and partitions. Other workers with similar skills to glaziers install glass or mirrors in furniture and boats, or replace glass in automobiles.

AREAS OF EMPLOYMENT - Most glaziers are employed in large urban areas. In small communities, the work of the glazier is done by persons who also do painting or paperhanging.

REMUNERATION - 1958 survey of minimum union rates in 52 large cities--$3.22 per hour. 1960 union rate in representative Ohio area--$3.07 per hour.

# GLAZIER

**METHOD OF ENTRY** - Training authorities recommend completion of a 3-year apprenticeship program. A substantial portion of glaziers, however, have learned the trade informally. In smaller communities, many journeymen painters and paperhangers have learned to do glazier work as part of the apprenticeship training for their trade.

**REQUIREMENTS FOR ENTRY** - Apprenticeship applicants generally are required to be at least 18 years of age; a high school education or its equivalent is desirable.

**Training** - The apprentice learns how to use and handle the tools, machines, and materials of the trade. The program also includes on-the job experience in the installation of wood and metal sash (for example, doors, windows, and partitions); setting for store front openings, structural glass, mirror, showcases, automobile glass, shower doors, and tub enclosures; replacement of glass; and scaffolding. Related classroom instruction is included.

**Union membership** - A large proportion of glaziers employed in construction work are members of the Brotherhood of Painters, Decorators and Paperhangers of America.

**WORKING CONDITIONS AND HAZARDS** - Must be physically fit to perform necessary lifting and carrying of materials and tools; must be able to stand for sustained periods of time; work inside or outside from high places as job requires. Hazards include cuts from sharp edges and possibility of falls from windows and scaffolds.

**ADDITIONAL INFORMATION** - Local contractors, unions, and Ohio State Employment service local offices. Also, Brotherhood of Painters, Decorators and Paperhangers of America, 217-219 North Sixth St., Lafayette, Indiana.

**NOTES** - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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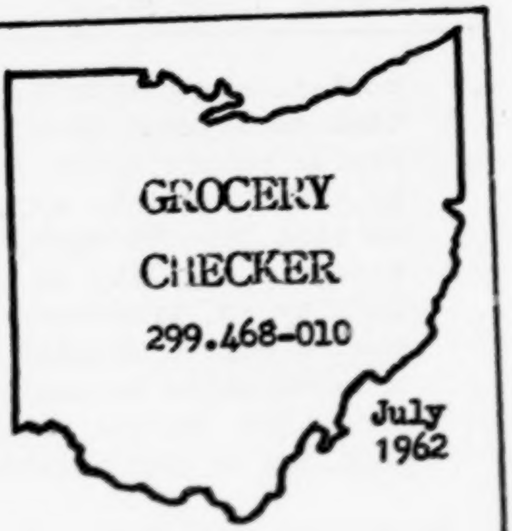

GROCERY
CHECKER
299.468-010

July
1962

## OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - Operates cash register recording prices of groceries, meats produce, etc. Rings sales tax items, collects monies, makes proper change, and gives trading stamps where this is the employer's policy. Places groceries or other items in bags or containers, keeps check-out area clean and supplies in orderly arrangement. May unload or help customers unload groceries from shopping basket to counter of cashier's stand. May stock shelves and make price changes on merchandise. Performs other duties as directed.

## OPPORTUNITIES

**Current** - Employment prospects are good. Openings are available on a part-time or full-time basis. Continual increase in the number of self-serve markets and replacement needs of existing self-serve grocery stores and super markets will create a need for additional personnel.

**Trends** - The need for additional personnel will continue to grow with the increase in population and the subsequent expansion of housing facilities and shopping centers in both urban and suburban communities.

**FIELDS OF EMPLOYMENT** - Chain stores, super markets, and other large self-serve grocery stores.

**AREAS OF EMPLOYMENT** - State-wide, with greater concentration in larger population centers.

**REMUNERATION** - The beginning wage for a part-time grocery checker ordinarily ranges from $1.42 to $1.62 an hour. For a full-time grocery checker the starting wage ranges from $1.66 to $1.72 an hour. Hourly wages are highest in large metropolitan areas and lowest in rural communities. Pay increases are given at periodic intervals for a period of two to three years depending upon the employer's policy. Full-time grocery checkers generally work a 5-day week, of 40 hours, and may work two or three evenings a week. Employees working additional hours receive time and a half for overtime. Some grocery chain stores, particularly the larger ones, provide extra benefits for their full-time employees. These benefits may include life insurance, retirement, paid vacations, hospitalization, and surgical and medical insurance.

## METHODS AND REQUIREMENTS FOR ENTRY

**Selection Factors** - High School graduation is usually required for full-time or part-time employment. All establishments will accept a non-graduate for part-time employment if applicant is currently enrolled in a high school program. Prefer people under 35 if they lack experience as a cashier or grocery checker. Will accept applicants up to the age of 42 if they have had experience in this type of work. Personal qualifications should include a pleasant personality, ability to meet and work with people, neat appearance, good manners, loyalty and trustworthiness, memory for details, efficient work habits, and comprehensive knowledge of basic arithmetic. A minimum of 5' 2" with weight proportionate to the height is usually required. Should be in good physical condition as the work requires continued standing, reaching, lifting, and handling of merchandise.

Examinations - Many large chain store organizations have developed their own test for measuring the applicant's aptitudes and ability as well as their knowledge of basic arithmetic.

Training - Most grocery checkers are given on-the-job training; however, many large chain store organizations give formal classroom training for grocery checkers. Training includes the techniques of good public relations, cash register operation, correct procedures for handling money, making change, and dispensing trading stamps, and the correct method of packing groceries.

Union Membership - The job in some instances may require union membership. Union information can be obtained from the Retail Clerk's District Council No. 8.

WORKING CONDITIONS - In general markets are well lighted, heated and ventilated; sometimes the check stand is in a drafty area. Stores are likely to be noisy at peak shopping hours. Continuous contact with other employees and the public.

FOR ADDITIONAL INFORMATION - Write or contact: Independent owners or managers of chain stores, super markets, and other large self-serve grocery stores; Central Ohio Retail Grocers Association, 527½ West Broad Street, Columbus, Ohio. Retail Clerk's District Council No. 8, 187 South High Street, Columbus, Ohio.

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
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Ohio State Employment Service

## OCCUPATIONAL RELEASE

HIGHWAY PATROLMAN

375. -
all suffixes

revised
June
1963

**NATURE OF THE WORK** - Patrols state highways within assigned areas to control the flow of traffic and enforce motor vehicle laws, load restrictions, and driver's licensing regulations. Will enforce public utilities regulations and report on violations. Responsible for investigating the conditions and causes of traffic accidents, airplane crashes, and thefts from farm lands; apprehending criminals and investigating criminal acts; supervising driver's license examinations; and enforcing all criminal laws on state owned or leased property. Other services are provided by the patrol in protecting and assisting the citizens of Ohio. These include supervising traffic in congested areas; providing road information and assistance to motorists; rendering first aid and assistance in disaster areas; giving safety lectures and demonstrations; inspecting school busses; cooperating in state wide civil defense measures; providing the services of underwater recovery; and maintaining a coast-to-coast communications network. Maintains records and makes reports regarding daily activities. Will assist other law enforcement agencies in protecting and serving the people of Ohio. May appear in court as a witness to traffic violations and in criminal cases.

## OPPORTUNITIES

**Current** - The majority of positions available, at any one time, develop from the need to replace those who retire, die,or leave the occupation for other reasons. A few openings will arise with the enlargement of present staffs.

**Trends** - The need for additional men will depend primarily upon the growth in population and the resultant increase in the number of motor vehicles on Ohio's highways. Another factor determining the need for more personnel will be the expected increase in responsibilities, duties, and services provided by the State Highway Patrol.

**AREAS OF EMPLOYMENT** - Will be assigned to one of the sixty posts located throughout the State of Ohio, and is subject to transfer to any post within the State at the discretion of the Superintendent.

## REQUIREMENTS FOR ENTRY

**General** - A high school graduate or its equivalent. Must be a citizen of the United States, a legal resident of Ohio for a period of five (5) years, and possess a valid Ohio vehicle operator's license with at least two (2) years driving experience. The minimum age requirement is 21, the maximum is 35. May be hired as a post dispatcher if applicant is within one year of his 21st birthday. Desirable personal qualities include maturity, integrity, ingenuity, intelligence, leadership, courage, emotional stability, and the ability to deal with situations tactfully. Applicants meeting basic requirements must successfully pass a preliminary written and physical examination, and undergo a thorough investigation to determine reputation, character, abilities, and personal qualities. Satisfactory completion will qualify the individual for employment as a post dispatcher prior to enrollment in the Highway Patrol Academy.

Training - Recruit training is made up of fourteen (14) weeks of intensive classroom study, physical training, and practical experience. Trainees may be dismissed for failure to meet physical, scholastic or conduct requirements. Instruction will be given in such areas as: criminal and traffic laws, court procedures, accident and criminal investigation, interrogation, first aid, public relations, use of weapons, physical conditioning, swimming and water safety, pursuit driving, and truck weighing. The on-duty patrolman can get in-service training in leadership, criminal investigation,underwater recovery, photography, chemical testing, radiation, firearms, human relations and administration. Patrolmen are also provided opportunities to attend other police schools throughout the nation.

Physical - Must have good health, be at least 5' 8" in height but not more than 6' 4", and weigh at least 165 pounds. Weight should be in proportion to height. Vision must be 20/30 in each eye uncorrected, with normal depth and color perception.

Examination - Upon completion of training the applicant is required to take and pass a competitive Ohio State Civil Service Examination. Prior to examinations, assignment is on a provisional basis.

Working Conditions - Eight (8) hours per day; 40 hours a week. Subject to assignment of additional hours in emergencies.

REMUNERATION - A post dispatcher earns $300 per month. A student patrolman is paid $330 per month; in addition, he is provided room, board, uniforms, and other necessary equipment (except shoes). The beginning salary for a patrolman is $380 per month. Will receive periodic increases if performance meets efficiency standards. The state assumes the responsibility of maintaining and replacing uniforms and equipment. Extra benefits include paid vacations, sick leave, medical insurance, group life insurance, hospitalization, and death benefits.

AVENUES OF PROMOTION - Dispatcher - Student Patrolman - Patrolman - Patrolman II - Corporal - Sergeant - First Sergeant - Lieutenant - Captain - Major - Colonel. Advancement is based upon individual capability, performance, personal qualifications, and leadership ability.

Sources for Additional Information - Write or contact: The nearest Patrol Post; Superintendent of Ohio State Highway Patrol, Box 7037, Station "E", Columbus, Ohio

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
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Ohio State Employment Service

## HOD CARRIER

869.887-046

(Construction Laborers)

July, 1960

## OCCUPATIONAL RELEASE

NATURE OF WORK - Construction laborers shovel and grade earth, and carry materials to the location where they are needed, by hand or wheelbarrow. May also move small units of machinery or equipment. Often set bracings and supports in place at the sides of excavations to prevent collapse of trenches. In cases where concrete is mixed on the job, fill mixer with ingredients and, if already mixed, help pour concrete, spread it, and spade it to prevent air pockets. Clean up rubble at successive stages in construction. Tear out old work in cases of alteration or modernization. In concrete highway paving, handle and place the forms for concrete, set up and move the hose to supply the concrete mixer with water, and cover new pavement to prevent excessive drying during the "curing" period.

Although the term, hod carrier, covers all types of construction laborers, it is sometimes used more specifically to refer to bricklayers' helpers, or plasterers' tenders.

Hod carriers serve journeymen in their respective trades, supplying them with materials, setting up and moving portable scaffolding, and providing other services needed by these journeymen.

OPPORTUNITIES

Current - Nationally, continued increase in employment for construction laborers is expected during the 1960's as a result of the anticipated large growth in the volume of construction activities. Locally, conditions vary widely from one community to another. Up-to-date information should be obtained from local unions, contractors, and local offices of the Ohio State Employment Service.

Trends - Increased mechanization and improved methods of materials handling will limit the growth in employment of these workers.

FIELDS OF EMPLOYMENT - Construction contractors on almost every kind of building, road, and engineering project. A large number of these workers are also employed by State and municipal public works and highway departments, and by public utility companies in repairing, maintenance-of-way work, and excavating.

AREAS OF EMPLOYMENT - Nationwide and Statewide. Job locations in construction are apt to change frequently. In order to remain employed, the construction laborer may, at times, find it necessary to travel considerable distances from his home.

## HOD CARRIER (Construction Laborers)

**REMUNERATION** - 1958 survey of union hourly rates in 52 large cities--$2.47 per hour for building laborers and $2.68 for bricklayer's tenders. 1960 hourly union wages in a representative Ohio area--$2.70 for building laborers and $2.90 for bricklayers' tenders. Weather conditions and the brief duration of jobs mean much lost worktime and lower annual earnings than hourly earnings would indicate.

**METHOD AND REQUIREMENTS FOR ENTRY** - No formal training is required to obtain a job as a construction laborer. Generally, to be employed as one, a young man must be at least 16 years of age and in good physical condition. The laborer's first job is usually on the simplest type of work, but as he gains experience, he does more difficult work, For instance, bricklayers' tenders require familiarity with the work of journeymen, some knowledge of the materials used, and some degree of judgment. Some types of construction laborer and hod carrier jobs often require not only experience, but a broad knowledge of construction methods, materials, and operations. Rock blasting is an example. In order to set the blasting charge properly, the laborer must have a knowledge of the various layers and considerable experience in handling dangerous explosives. Also, on-the-job experience is necessary in the construction of tunnels and caisson foundations. Laborers do all of the work back of the air lock, including operations which would be done by journeymen if the job were located elsewhere.

Although laborers work with skilled building craftsmen, they rarely have a chance to work with the journeymen's tools or equipment, and therefore, generally have little opportunity to pick up the skills of a building trade.

**Union membership** - Many laborers and hod carriers are members of the International Hod Carriers', Building and Common Laborers' Union of America.

**WORKING CONDITIONS** - The work is generally physically strenuous and requires bending, stooping, and heavy lifting. Much of the work is performed outdoors.

**ADDITIONAL INFORMATION** - Local contractors, unions, Ohio State Employment Service local offices.

**NOTES** - (Local opportunities, wages, etc.)

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Written: January 1968

# HOSPITAL ATTENDANT

Nurse Aide 355.878
Orderly 355.878

NATURE OF THE WORK The hospital attendant assists professional nursing personnel with routine and relatively simple tasks to provide services to patients for their comfort and well-being.

Women employed as hospital attendants are usually called nurses' aides. Among the tasks often performed for patients by nurses' aides are answering call bells, delivering messages, serving meals, feeding patients who are unable to feed themselves, making beds with fresh linen, bathing patients, and arranging flowers. Duties may also include giving back rubs, taking temperatures, and assisting patients in getting out of bed and walking.

Orderlies provide many of the same services for male patients and, in addition, perform such tasks as wheeling patients to operating and examining rooms and transporting and setting up heavy equipment. Attendants may also be assigned to tasks less directly associated with patient care; for example, working in hospital pharmacies or helping with sterile supplies.

EMPLOYMENT OUTLOOK An increasing demand for hospital attendants is anticipated as a result of growth in this occupational area and in a need to replace employees who retire or stop working. The general expansion of the health service field will create thousands of new openings as will the increasing use of attendants to perform non-medical tasks once performed by professional personnel.

FIELDS OF EMPLOYMENT The great majority of workers in this occupation are employed in hospitals. Additional opportunities exist in sanitariums, nursing homes, and in other institutions providing facilities for care and recuperation. Such establishments are found in every part of the state, but most opportunities for employment as nurses' aides and orderlies are in the heavily populated areas.

REMUNERATION After some training the hospital attendant may expect to earn between $250 and $350 per month. Salary may be dependent upon the geographic area, the size of the medical facility, and the individual job duties.

In some institutions, free lodging, free meals or meals furnished at cost, as well as uniforms and laundering of uniforms may be provided for hospital attendants.

## REQUIREMENTS FOR ENTRY

Training-Selection Factors There are no established requirements regarding age and education for persons entering this field. Most hospitals, however, prefer a person who has a high school education and who is over 18 years of age. Most hospitals give on-the-job training which varies in length depending on the policies of the institution. Some hospital attendants receive training by working under the close supervision of an established staff person for the first few weeks, while others receive formal or classroom instruction. Training is sometimes provided in certain areas under the Manpower Development and Training Act. Contact your local Ohio State Employment Service Office for information on available MDTA training courses.

WORKING CONDITIONS With few exceptions, the scheduled work week of the attendants in hospitals is 40 hours or less. Because nursing care must be available to patients on a 24-hour-a-day basis, scheduled hours include night work and work on weekends and holidays.

Attendants who are employed in hospitals and similar institutions generally receive paid vacations which, after one year of service, may be a week or more in length. Paid holidays and sick leave, hospitalization, medical benefits, and pension plans are also available to many hospital employees.

AVENUES OF PROMOTION With specialized training, some hospital attendants may prepare themselves for better paying positions, such as hospital operating room technicians, oxygen technicians, or ward clerks. Generally such training is available in the hospital.

SOURCES OF ADDITIONAL INFORMATION Contact: The Ohio State Employment Service Office in your community; local hospitals.

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Ohio Bureau of Employment Services
145 South Front Street
Columbus, Ohio 43216

# EMPLOYMENT
# INFORMATION
# SERIES

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Ohio State Employment Service

## HOTEL CLERKS

242.368-010

June,
1960

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Most hotels employ one or more front office clerks who greet guests, rent rooms, handle mail, and perform other duties related to assignment of rooms. Working "up front" in hotel lobbies, they deal directly with the public and help build a hotel's reputation for courteous and efficient service. In small hotels and in motels, a front office clerk (who may be the owner) may not only rent rooms, issue keys, sort mail, and give information but also perform some bookkeeping work and act as cashier. On the other hand, large hotels may employ several front office clerks, each with a few specific duties.

Room or desk clerks, mostly men, have the responsible job of renting rooms and are usually the first of the front office clerical staff to greet guests. They must try to fill any special requests for room accomodations made by guests, being careful that the rooms they assign will satisfy guests as well as yield maximum revenues for each section of the hotel. Room clerks also see that guests fill out registration forms properly and may explain hotel rates and the types of service available. After registration is completed, room clerks signal bellmen to carry guests' luggage. Key clerks issue and receive room keys.

Reservation clerks acknowledge guests' reservations by mail or telephone, type out registration forms, and notify the room clerk when guests are due to arrive. To keep room assignment records current, rack clerks insert or remove forms indicating when rooms become occupied or vacant or when they are closed for repairs. They also keep housekeepers, telephone operators, or other personnel informed about changes in room occupancy. Other special clerks, such as mail and information clerks, are employed in some hotels. In the largest hotels, floor supervisors or floor clerks are assigned on each floor to handle the distribution of mail and packages and perform other incidental duties.

Front office clerks on late evening shifts, when demands for service are less frequent, often have added duties. For example, the night room clerk may perform bookkeeping functions or assist cashiers with their clerical work.

## OPPORTUNITIES

Current - A limited number of openings is expected during the 1960's, chiefly as a result of promotions. Some new jobs will become available in newly built hotels and motels.

Trends - Changes in general economic conditions affect this occupation much less than some others in the hotel industry, making it relatively stable.

Women - The practice of hiring women as mail and information clerks or reservation clerks, which arose during World War II, will continue. However, opportunities for promotion will be limited.

FIELDS OF EMPLOYMENT - The more specialized front office clerk occupations are found in the larger hotels.

AREAS OF EMPLOYMENT - Large and small hotels, also motels, Nation-wide and State-wide.

REMUNERATION - Earnings in Ohio vary considerably depending upon the location, size, and type of hotel. Women room clerks generally tend to earn less than men, on the average. Key, mail, and information clerks are usually paid lower salaries than room clerks.

METHOD OF ENTRY - High school graduates with some clerical aptitude and the personal characteristics necessary for dealing with the public may be hired on such beginning jobs as those of mail, information or key clerk. Neatness, a courteous and friendly manner, and ease in dealing with people are important personal traits. Typing and bookkeeping high school courses may be helpful, especially in combination type jobs found in smaller hotels or for night-shift work where additional clerical duties are often performed. Education beyond high school is now generally required, but hotel employers have increased their emphasis in selecting college trained personnel in order to advance them to managerial positions later. Front office clerks may improve their opportunities for promotion by taking home study courses, such as those sponsored by the American Hotel Association through the American Hotel Institute.

Training - The job is learned mainly through on-the-job experience. Usually a brief induction training is given.

WORKING CONDITIONS - May be employed on any one of 3 shifts beginning early in the morning, or in midafternoon or midnight.

AVENUES OF PROMOTION - A typical promotion ladder might be from key or rack clerk to room clerk, to assistant front office manager, and later to front office manager.

SOURCES FOR ADDITIONAL INFORMATION - Local hotels and motels, American Hotel Association, 221 W. 57th St., N.Y.; The National Council on Hotel and Restaurant Education, 777 14th St., N.W., Washington 5, D.C.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed by the Counseling Section Ohio State Employment Service**

HOTEL
INDUSTRY

## INDUSTRIAL RELEASE

NATURE OF INDUSTRY - Rooms for guests and restaurant facilities are the chief services provided by hotels and motels. Large city hotels also have banquet rooms, exhibit halls, and spacious ballrooms to accomodate conventions, business meetings, and social gatherings. Many large hotels employ professional entertainers and have recreational and entertainment facilities such as swimming pools and roof gardens. In addition, most hotels provide guests with information about interesting places to visit; sell tickets to theaters or sporting events, and will make arrangements for babysitting services. For guests' convenience, there are newsstands, gift shops, barber and beauty shops, and valet and laundry service, usually handled on a concession basis. Today, the fast-growing motel business is also increasing the types of services offered. Only minimum training is required for a large number of people in hotel occupations. Demand is increasing for specially trained people in many departments. Hotels are complex organizations and need experienced personnel to direct and coordinate operations which mayinvolve thousands of guests annually and millions of dollars worth of property and equipment.
Occupations within business - Housekeeping (maids, porters, housemen, linen room attendants, laundry workers, executive housekeepers); Lobby (bellmen, key clerks, mail clerks, information clerks); Office (bookkeeper, cashiers, telephone operators, secretaries, stenographers, typists); Restaurant (unskilled dishwashers to highly skilled chefs, waiters, waitresses, hostesses); Managers, Assistant Managers. Also, accountants, auditors, personnel workers, musicians, entertainers, recreational workers, maintenance workers such as carpenters, electricians, stationary engineers, plumbers, and painters. Also, detectives, barbers, beauty operators, valets, tailors, seamstresses, and gardeners.

## OPPORTUNITIES

Current - Nationally, thousands of openings mostly in the relatively unskilled occupations if favorable economic conditions continue which tend to contribute to a high turnover rate. Some replacements will be needed in "front office" jobs, in which vacancies arise, partly because some clerks advance to managerial posts. Continued good opportunities for your people to acquire the training and experience necessary to qualify for jobs as cooks, chefs, and food managers. Also continued opportunities for thousands of students and other temporary workers yearly in a variety of occupations in resort hotels. Motel employment is expected to grow at a faster rate than hotel employment during the 1960's, chiefly in service occupations such as maid, porter, food preparation and food service.

Trends - In the long run, rising population and income, and increased travel for business and pleasure are expected to result in a continued slow rise in hotel and motel occupations. Technological development will displace some unskilled occupations -- elevator operators, dishwashers, etc., and office machine improvement may displace some clerical workers. Economic downturn would affect such occupations as maid and bellman.

FIELDS OF EMPLOYMENT - There are three main types -- comercial (transient), residential, and resort (seasonal). Commercial hotels are in the majority. Motels, typically small, employ, on the average, only 1 paid worker per establishment.

AREAS OF EMPLOYMENT - Cities of all sizes and in resort areas. By far the greatest numbers are in the large urban centers of the most populous States.

REMUNERATION - Hotel workers' earnings depend not only on their occupations but also on the location, size, and type of hotel. These factors largely determine both the wages and the amount received in tips -- a major part of the earnings for many hotel workers including bellmen, waiters, and waitresses.

METHOD OF AND REQUIREMENTS FOR ENTRY - Although most entry jobs have no specific education requirements, most employers prefer high school graduates. In the past, enterprising young men have been known to start as a bellman and work up to manager. Today, advanced positions are more often filled by people with specialized training. A complete four-year program leading to a Bachelor of Science degree in Hotel Management is offered at various colleges and universities across the nation. (None of these are located in Ohio. Ohio State University and Ohio University offer programs which provide a basic background, however.) Even those hotel workers with specialized training are expected to start at a lower skilled job and work up.

Almost all front office jobs require a high school education and personal characteristics necessary for dealing with the public. Although college training is not mandatory, more employers are placing more emphasis on college trained people. The typical promotion pattern is from a front office entry job to room clerk and front office manager.

Housekeeping is learned on the job as a rule. Opportunities for advancement may improve by taking home study courses offered by public or trade schools.

WORKING CONDITIONS - According to a recent survey hotel employees usually work a 40-hour week in northern cities and a 48-hour week in southern cities. Workers may be employed on any one of 3 shifts, beginning early in the morning, mid-afternoon or midnight. Managers and housekeepers who live in the hotel usually have regular work schedules but may be on call 24 hours a day, 7 days a week.

# HOTEL INDUSTRY

Unions - The major union is the Hotel and Restaurant Employees and Bartenders International Union. Uniformed staffs such as bellmen and elevator operators may be members of the Building Service Employees International Union.

ADDITIONAL INFORMATION - Contact local hotels or write the following for career opportunities -- American Hotel Association, 221 West 57th St., N. Y. For training opportunities and a directory of schools and colleges offering courses in the hotel field -- The National Council on Hotel and Restaurant Education, 777 14th St., N. W., Washington 5, D. C. For information on hotel housekeeping courses -- National Executive Housekeepers Association, Statler-Hilton Hotel, Boston 17, Mass. For detailed job descriptions, see the Employment Information Series.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service

## HOUSEKEEPERS AND ASSISTANTS

323. -
all suffixes

June, 1960

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Hotel housekeepers are mainly responsible for keeping guest rooms, meeting rooms, halls and lobbies clean and attractive. Supervise the activities of maids, housemen, and other employees in this department which is, in many instances, the largest department of the hotel. Generally hire and discharge employees, help train new ones, keep employee records, and perform other duties which vary with the size and type of the hotel. The majority of women housekeepers are employed in small hotels where they not only supervise the cleaning staffs, but perform some of the work done by the maids. In larger hotels, or small luxury-type hotels, duties of the executive housekeeper are primarily administrative. Besides supervising a staff which may number in the hundreds, may prepare the departmental budget; make regular reports to the manager on the condition of the rooms, needed repairs, and suggested improvements; purchase or assist in purchasing supplies; take periodic inventories, and have responsibility for interior decorating work. Some executive housekeepers employed by large hotel chains may have special assignments such as reorganizing housekeeping procedures in an established hotel or setting up a housekeeping department in a newly acquired hotel.

In many hotels, executive housekeepers are assisted by floor housekeepers who directly supervise the work on one or more floors. In large hotels, there may also be an assistant executive housekeeper. The housekeeper may also supervise a variety of specialized workers such as seamstresses, draperymakers, upholsterers, furniture refinishers, painters, and carpenters.

OPPORTUNITIES

Current - Nationally, several hundred openings yearly for housekeepers and their assistants are expected in the early 1960's to meet replacement needs. Many housekeepers are near retirement age. Some openings will occur as a result of the erection of new city hotels, and the growing number of large luxury hotels and motels.

FIELDS OF EMPLOYMENT - The larger hotels offer more positions in which administration is the main duty.

AREAS OF EMPLOYMENT - Small and large hotels, and motels, Nation-wide and State-wide.

REMUNERATION - In 1958 typical salaries for executive housekeepers ranged from $3600 to $8000. In addition, lodging, meals, laundry and other services are usually furnished. Salaries under $3000 are received by many working housekeepers who supervise few people and spend a large part of their time cleaning rooms and performing related work.

METHOD OF ENTRY - Opportunities to gain practical experience for housekeeping jobs are plentiful since thousands of openings occur yearly for maids. However, since only one top job as housekeeper exists in each hotel, it may take years before an opening occurs in a particular hotel.

REQUIREMENTS FOR ENTRY - Women in older age groups have good opportunities in this field, and many are allowed to work beyond retirement age because of the value of their experience. The best opportunities will arise for women with administrative ability, specialized training in hotel housekeeping procedures, and a flair for interior decorating work.

Training - A list of schools offering courses in housekeeping may be obtained from the National Executive Housekeepers Association, Statler-Hilton Hotel, Boston 17, Mass.

AVENUES OF PROMOTION - From assistant housekeeper to executive housekeeper. Also, housekeepers with hotel experience will find employment opportunities in hospitals, clubs, college dormitories, and a variety of welfare institutions.

SOURCES OF ADDITIONAL INFORMATION - Local hotels.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

## INDUSTRIAL ENGINEER

012.188-030

**Revised**
**March**
**1963**

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## OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - The industrial engineer is concerned with the efficient use of equipment, personnel, and materials in industry. The primary object is to obtain maximum output and the highest quality at the lowest possible cost. Consideration must be given to all factors which affect the quality, quantity, and cost of products. He will perform the following activities in obtaining the efficient use of personnel: plan or "design" operations to obtain maximum productivity; prepare job analyses and evaluations; set standards of performance through the use of time motion studies; establish wage and other incentive systems; and develop plans for the health, safety, and welfare of employees. To effectively utilize the materials necessary for production he may: plan the flow and scheduling of operations; design systems for the control of production, inventory, quality, and cost; and work on the improvement or development of products. To make the best use of plant and equipment the engineer will make studies regarding the plant location and expansion; design plant and equipment layouts; and make the most economical selection of tools, equipment, manufacturing processes, and methods of assembly. In achieving the above goals he will deal with management, the engineering staff, the production force and possibly labor representatives. The industrial engineers' knowledge and experience finds application throughout all the departments of an industry - industrial relations, materials and production control, methods, sales, production, etc.

**OPPORTUNITIES**

**Current** - The employment prospects for recent graduates are very good. Many positions are developing as a result of the increased complexity of industrial operations, technological advancements, the need to increase productivity and lower production cost, industrial expansion, and the increased use of automation processes and equipment.

**Trends** - Employment opportunities are expected to increase during the 1960's.

**For Women** - Men predominate in this field; however, opportunities exist for women with enterprise and a willingness to assume responsibility.

**FIELDS OF EMPLOYMENT** - The majority of industrial engineers are employed in the manufacturing industries. Others work in construction and mining industries, utility companies, and government agencies. A small number are employed by banks, life insurance companies and other large business organizations.

**AREAS OF EMPLOYMENT** - Industrial engineers are employed in all states and cities, especially in or around large industrial centers.

# INDUSTRIAL ENGINEER

REMUNERATION - The starting salary for industrial engineers with a Bachelor's degree and no experience is $520 to $600 per month. Persons with advanced degrees will command a higher starting salary. The beginning salary for engineers employed by the Federal Government ranges from $5,540 to $6,675 a year depending upon the individual's college record and the amount of graduate study completed up to one full year. With additional experience, education, ability, and initiative the industrial engineer may earn a salary ranging from $15,000 to $30,000 per year. Extra benefits provided by the employer may include medical insurance, group life insurance; retirement, bonus, and stock option purchase plans.

REQUIREMENTS FOR ENTRY

General - Interested in personnel needs, mechanical processes, and equipment; and have the desire to solve or eliminate managerial or technical operating problems and increase production. The ability to think quantitatively, logically, and practically; present ideas clearly and concisely in oral and written form; and a willingness to assume the responsibility of such a position. Possess the qualities of patience, persistence, honesty, initiative, open-mindedness, and mature judgment.

Education - Graduation from an accredited college or university with a Bachelor's degree in industrial or mechanical engineering. The following institutions have the accreditation of the Engineers' Council for Professional Development for a degree in industrial engineering: Ohio State University, Columbus; Ohio University, Athens (Mechanical Engineering with an Industrial Option); and the University of Toledo (Mechanical Engineering with an Industrial Option). Some of the subjects the industrial engineer will study in college include: algebra, trigonometry, geometry, chemistry, physics, manufacturing processes, engineering management, safety engineering, methods analysis and time study, quality control, production engineering, and design of production systems. For a list of schools offering an accredited program of study in mechanical engineering refer to the occupational release on Mechanical Engineer, the section on requirements for entry.

Licenses, examinations - All states require registration for the legal right to practice professional engineering where life, health, or property may be affected by the engineer's work. Requirements for registration as a professional engineer may be obtained from the Professional Engineers and Surveyors Registration Board. The registration fee is $15.00.

AVENUES OF PROMOTION - The industrial engineer may start in a training program that will enable him to obtain practical experience, and afford him the opportunity to apply his theoretical knowledge. After gaining experience in various departments the engineer may be assigned to a more permanent position such as: plant lay-out man, safety engineer, test engineer, or assistant industrial engineer. Later advancements may lead to the following positions: methods engineer, production engineer or manager, sales engineer, or plant industrial engineer. Advancement is dependent upon individual growth, supervisory ability, and enterprise. There is no direct or specific avenue of promotion in this particular field.

FOR ADDITIONAL INFORMATION - Write or contact: Engineers' Council for Professional Development, 345 East 47th Street, New York 7, New York; Professional Engineers and Surveyors Registration Board, 21 West Broad Street, Columbus 15, Ohio; Ohio State University, College of Engineering, Columbus, Ohio; Ohio State Employment Service. Read: "Orientation to Engineering," by A. W. Futrell, Jr.; section on Engineering, Occupational Outlook Handbook, United States Department of Labor.

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: May 1968

# INSTRUCTOR
# VOCATIONAL TRAINING
## 097.228-026

NATURE OF THE WORK The vocational training instructor teaches the practical application of academic technology. A part of each day is devoted to giving formal classroom instruction, the remainder in supervising laboratory and shop activities designed to make practical and to develop each academic point. He usually specializes in one subject area: automotive maintenance and repair, machining, electricity, carpentry, cooking, cosmetology, painting, printing, or welding, to mention only several among a growing number. In addition to his chosen area, he may teach applied mathematics, drawing, and science, and other technical subjects related to his field.

Each day brings a variety of responsibilities. The instructor prepares classroom lecture and discussion notes and an accompanying set of visual aids including diagrams, graphs, films, and models to better illustrate each point. He writes and grades test materials for laboratory, classroom, and shop. He plans and supervises laboratory and shop assignments, evaluating each student's work and making individual suggestions to each student to help his understanding and to improve his technique.

In addition to regular, daily instruction, the vocational training instructor may advise after-school activities related to his teaching area, participate in Parent-Teacher association, institute, or college and university faculty activities, counsel with parents, students, and advisors, and belong to professional associations related to his field.

EMPLOYMENT OUTLOOK The number of vocational education programs is constantly growing, programs for which there is always a demand for qualified personnel. The number of vocational training instructors has doubled in the last four years and will double again by 1970 as vocational education meets greater and greater successes. The vocational education programs in large and small communities alike have grown with increases in Federal funds from the Smith-Hughes Act, especially from the Vocational Education Act of 1965, and others. Currently, the trend in employment is to hire an instructor who is prepared to teach both the practical application of each area and its related technical information.

As the number of courses grow, the number of women employe as vocational training instructors will also increase especially in such areas as cosmetology, dressmaking, baking and cooking, commercial art, dental technology, practical nursing, and in commercial food and institutional service (that in hotels, hospitals, and public and private institutions).

Currently there is a special need for instructors in the areas of machining, automobile mechanics, automobile body and fender repair, radio and television repair, commercial cooking, mechanical drafting, carpentry, cosmetology, electronics, small appliance repair, office machines repair, printing, and welding.

## CLOSELY RELATED OCCUPATIONS

Apprentice Training Instructors
Ground and Flight Training Instructors
Navigation Instructors
Tutors
Athletic Instructors
Industrial Instructors and Trainers (Personnel Services)
On-the-Job Training Instructors

**AREAS OF EMPLOYMENT** One can find vocational training instructors teaching and working in every area and community in public junior high and senior high schools - both vocational and comprehensive, in public and private trade and technical schools and institutes, on college and university campuses, in industrial and commercial firms, and in joint and area vocational-technical schools and training centers.

**REMUNERATION** Salaries for beginning and experienced instructors depend upon the amount and quality of both occupational experience and professional instruction and study. Few instructors entering the teaching field with little or no experience earn below $6,000 per year. With occupational and/or prior teaching experience, an instructor may begin at an annual salary of $9,000 or more. Beginning and experienced instructors together average $8,000 per year income. With advanced study, promotion, and experience, one may earn as much as $13,000 to $15,000 per year.

## REQUIREMENTS FOR ENTRY

**General** Each prospective vocational training instructor must have at least a high school education or its equivalent (see "Training Directory," pp. 102-107 for further information about High School Equivalency examinations), and should have an interest in young people and in teaching, an ability to organize and plan around specific objectives, the capacity for projecting ideas and concepts, and an interest in working with and for people.

**Training** In addition to a high school diploma, one must have either a college degree in vocational education, in which professional methods and teaching courses are included, or must exhibit occupational competency (the equivalent of seven or more years' successful employment in chosen teaching area). Certified teachers of other school subjects often qualify as vocational education instructors by obtaining occupational working experience.

Although a high school diploma is the minimum educational requirement, those people entering this profession from industrial and commercial firms are encouraged to secure at least the professional, academic courses in teaching methods and preparation included in a regular curriculum prior to or during their teaching experience. An alternative to this suggested college professional preparation is an "in-service" training program now provided for teachers entering the field from commerce or industry by itinerant instructors and in on-campus programs. In this "in-service" training, instruction is provided in how to prepare lesson plans, laboratory activities, and examinations, in how to use instructional materials, in various teaching methods, and in recognition of classroom problems. In addition, a one week pre-service orientation immediately prior to the opening of school is offered.

College training is currently available on campus and through the itinerant instructors of Ohio University, Kent State University, The Ohio State University, Toledo University, University of Cincinnati, and Bowling Green State University. In each case, instruction at these schools is free unless the applicant is applying for university credit.

Certification The Certification Division of the Ohio State Department of Education will issue a one-year temporary certificate to a qualified applicant upon employment at a cost of $2.00. Each renewal of a State one-year temporary certificate requires an additional 50 clock hours of in-service training. Upon completion of 200 clock hours, a four-year provisional certificate may be issued. An eight-year professional certificate requires an additional 18 semester hours of teacher education, one-half of which must be outside the field of Vocational Education.

AVENUES OF PROMOTION With experience, further study, and a growing knowledge of the school system, the vocational education instructor may advance to department head, training supervisor, curriculum coordinator, vocational guidance counselor, teacher-trainer, college trainer, or director of vocational education.

WORKING CONDITIONS The instructor in a school or training institution must face the daily strain of classroom activity, but his surroundings are generally clean and neat. The shop or laboratory may present the normal hazards that each piece of equipment affords in addition to dirt and noise. Equipment may be dated, limiting instruction. Recently, however, in newly established joint vocational schools and in vocational-technical centers, the attempt has been to recreate the actual industrial setting and to provide the best, most up-to-date equipment.

The public school instructor works a 32 to 40 hour week in addition to evening work grading, preparing lessons, and study. The public school instructor is usually employed for 10 months of the year, rather than the regular 9 months for other teachers, in order to complete special projects and prepare for the next school year's program. The instructor in the industrial setting works a schedule which complies with that of his firm.

## SOURCES OF ADDITIONAL INFORMATION

1) Division of Vocational Education
Ohio State Department of Education
610 Ohio Departments Building
65 South Front Street
Columbus, Ohio 43215

2) The Ohio State University
Chairman of Faculties
Vocational-Technical Education
Arps Hall
Columbus, Ohio 43210

3) Department of Industrial Education
Dr. Jerry Streichler, Chairman
Bowling Green State University
Bowling Green, Ohio 43402

4) Dean of Instruction
College of Education - Department of Vocational Education
Ohio University
Athens, Ohio

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# EMPLOYMENT INFORMATION SERIES

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## INTERIOR DESIGNER AND DECORATOR

142.051-014

Revised
July,
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Plans and supervises the furnishing of private homes and other structures, including offices, hotels, restaurants, stores and ships. Also works on theater, motion picture, and television set decorations.

On most decorating jobs, the structure is determined before the decorator arrives on the scene--that is, the walls, doors, windows, heating equipment, and so on, are in place. The decorator selects and arranges the furniture, draperies, wall and floor coverings, lighting fixtures, lamps, and other decorative items. May design certain items. On some jobs, works with architect in planning the interior of a new building or in remodeling an old one. This work is known as interior design. Today, architects tend to do more of the interior design work themselves, in new commercial buildings.

Devising a color scheme and preparing a plan showing the placement of furniture, accessories, and floor and wall coverings is the first step in a decorating job. May also, and for larger assignments usually does, prepare drawings or water colors of the finished interior to illustrate the scheme. Ordinarily must furnish complete cost estimates for the client's approval. The second step is to assemble the furnishings. A good deal of the decorator's time is spent selecting furniture, textiles, rugs, and decorative accessories, and in supervising painters, upholsterers, and other craftsmen who work on the interior and the furnishings. The decorator's job is not finished until everything is in place and ready for use.

**OPPORTUNITIES**

**Current** - On a national basis it has been stated that the demand for interior decorating services is expected to increase during the 1960's. However, new entrants may find it difficult to gain a foothold in this highly competitive field.In Ohio there is some demand for well-trained and well-qualified interior designer-decorators, However, this varies in different firms and localities. One firm states that interior decorating establishments are now limited chiefly to residential decoration, and that the loss of commercial business is causing a reduction in business volume.

**Trends** - In recent years department and furniture stores have played an increasingly important role in interior decoration for the home. And the growing volume of decorating work in commercial establishments and public buildings has most often been placed with the larger decorating establishments.It is expected that the larger establishments, both stores and decorating firms, will gain an increasing share of the decorating business. This development may provide increased opportunities for regular employment while restricting opportunities to set up small, independent operations.

**FIELDS OF EMPLOYMENT** - Many decorators have their own establishments. Some are "consulting decorators", who have no stock of furniture or fabrics to sell. More often, however, decorating establishments have furniture, decorative accessories, and fabrics for sale, since they find these attract clients for their services. Many of the larger department and furniture stores have decorating departments, and may use their decorators to arrange window displays in addition to their regular duties. Small numbers of interior designers and decorators are employed by architects, antique dealers, industrial designers, periodicals which feature articles on home furnishings, and manufacturers in this field.

AREAS OF EMPLOYMENT - Large cities and their suburbs.

REMUNERATION - Earnings of most department store decorators are usually figured directly as a percentage of their sales. Many decorating firms and department stores do not charge a fee for their services, but derive their income from profit on furnishings sold to customers. The fact that earnings are so closely geared to sales means that, for both employees and independent decorators, the income range is very wide. Independent studios pay in the neighborhood of $50 to $85 per week for properly qualified, beginning applicants. Most department stores pay 7-10% commission on sales to beginning interior designers with a fine arts degree from a recognized school.

REQUIREMENTS FOR ENTRY - It is still possible to become a decorator with little or no formal training, but most reputable decorating firms and department stores will accept only well-trained people in beginning jobs. For many jobs, the minimum formal education required is completion of a 3-year course at a recognized art school, or a 4-year college course leading to a Bachelor of Fine Arts degree, with a major in interior design and decoration. The inexperienced art school or other graduate is not accepted as a qualified decorator, but is expected to serve an informal apprenticeship in the field, either with a decorating firm or in a department store. The University of Cincinnati offers a Bachelor of Science degree in Design and Applied Arts which is recommended as one of the best preparations offered in this section of the country. This, and other Ohio schools are listed in the American Art Directory, Volume 40, 1958, as offering courses in interior design and decoration, as well as a major in art. The other Ohio schools are Ohio University, College of Fine Arts, Athens; Cleveland Institute of Art; Ohio State University, School of Fine and Applied Arts, Columbus; and the Toledo Museum School of Design.

The success of an interior decorator will depend, in good measure, on his or her ability to sell. The decorator who has his own establishment needs considerable business ability, as well as good salesmanship and a pleasing personality. In addition, the high school student who plans to become an interior decorator, should have some aptitude for drawing and interest in design.

AVENUES OF PROMOTION - The apprentice may progress from simple to more complex assignments without a change of title. May be promoted to assistant decorator, decorator, supervisory position, head of decorating department in a store, open his own decorating establishment, or develop into a stylist or home furnishings coordinator.

ADDITIONAL INFORMATION - Local interior decorating establishments, furniture and department stores maintaining interior decorating departments, above-mentioned schools, American Institue of Decorators, 673 Fifth Avenue, New York 22, N. Y.

NOTES - (Local opportunities, wages, etc.)

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: January 1968

# KEY PUNCH OPERATOR
213.582

NATURE OF THE WORK A key punch operator transcribes accounting and statistical data from source documents to tabulating cards by operating machines having an alphabetical and/or numerical keyboard similar to a typewriter. The operator inserts cards into the machine manually or engages the automatic feed switch and sets machine for the given operation. She presses a feed or trip key to get cards started, reads the information to be processed, and depresses appropriate keys to cut the cards. Cards are advanced to various positions automatically or manually. The key punch operator observes the machine to detect faulty feeding, positioning, rejecting, duplicating, skipping, punching or other mechanical malfunctions and notifies supervisor of malfunctions. The key punch operator may code the material prior to key punching the information onto the card, may operate a verifying machine which checks the accuracy of the translation, may operate sorting and tabulating machines, or do related clerical work.

EMPLOYMENT OUTLOOK Employment prospects at present are very good. Numerous openings and opportunities are being created each year by the growth and expansion of business and manufacturing firms processing extensive business records. In addition, many positions become available as a result of high replacement needs. Future employment of key punch operators may be unfavorably affected by newer and better methods of preparing data processing. The optical scanning machine, which reads information directly from the source material and records this information on a magnetic tape, is an example of recent technological developments that may affect future employment needs. Most of the people in the field are women.

FIELDS OF EMPLOYMENT Key punch operators are employed by medium and large size manufacturing companies and by wholesale and retail firms. Others are employed primarily by insurance companies, government agencies, utilities, transportation companies, and business service centers. The majority work in large municipalities or surrounding areas where the greatest percentage of these firms are located.

REMUNERATION The starting salary for key punch operators is approximately $300 per month. With some experience they can earn between $350 and $450 per month. Salaries vary according to the size and nature of the industry, skills and knowledge required, and size of the community.

Additional benefits may include paid vacations, sick leave, group health and life insurance, and retirement plans.

## REQUIREMENTS FOR ENTRY

General Most employers require graduation from high school and prefer business school training. Personal qualifications should include ability to meet and work with people, an alert mind, keenness of vision, dependability, efficient work habits, emotional stability, and the ability to concentrate amidst distractions. Physical requirements should include normal vision, normal hearing and good eye-hand coordination.

Training Key punch training may be required prior to employment. However, a general knowledge of the kind of equipment used is normally regarded as sufficient. Courses that will help individuals develop the skills necessary for key punch operation include business arithmetic, typing, and office machine operation. Operators will receive key punch training through the firm in which they are employed, in a special school established by equipment manufacturers, or through private or public schools. Training may be available under the Manpower Development and Training Act. Contact a local Ohio State Employment Service Office for information.

WORKING CONDITIONS A key punch operator performs routine, repetitive tasks. He usually works a 40 hour week. However, overtime may be required during busy periods. The key punch department is usually well lighted, ventilated, and air conditioned.

AVENUES OF PROMOTION Most workers start in this occupation as trainees and advance along the following lines: key punch operator - supervisor of key punch operators - section head. He may be transferred to sorting, verifying, or tabulating machines. Promotion is usually based upon training, experience, supervisory ability, and seniority.

SOURCES OF ADDITIONAL INFORMATION Write or contact any business or manufacturing firm, government agency, etc. using electronic data processing equipment. Refer to your library or contact people who are employed as key punch operators. Contact your local Ohio State Employment Service Office.

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Ohio Bureau of Employment Services
145 South Front Street
Columbus, Ohio 43216

# Employment Information Series

Written
January - 1966

## KITCHEN HELPER

318.887-010

**NATURE OF THE WORK** The kitchen helper works under the supervision of cooks and chefs to perform elementary, routine tasks involved in food preparation. In large kitchens employing many people, his duties are limited to handling food items. He measures, mixes, washes, and chops vegetables and salad ingredients. He also watches food while it is cooking to prevent burning. He may assist in preparing simple dishes.

In small establishments that do not employ dishwashers or janitors, the kitchen helper also has various cleaning duties. He may wash dishes, silverware, glassware, pots and pans; sweep and mop floors; dispose of trash and garbage; scrape and scour worktables and meat blocks; keep work areas clean and sanitary; and obtain food and kitchen supplies from storerooms and distribute them to other kitchen workers. In hospitals and institutions, he may set tables or prepare trays and help to serve them.

The kitchen helper often uses mechanical equipment, such as vegetable cutters and peelers, mixers, blenders, dishwashers, and sterilizers.

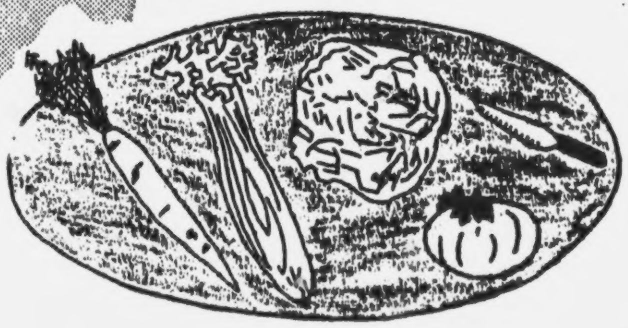
**OPPORTUNITIES**

**Current** Kitchen helpers represent one of the largest groups of restaurant employees. Turnover rate is high, creating hundreds of job openings in Ohio each year.

**Trends** Opportunities throughout the latter part of the 1960's are expected to be good. As the population increases, as income levels rise, and as a greater number of housewives secure outside employment, more meals will be eaten away from home. This will naturally result in a substantial growth in the restaurant industry and many new jobs for kitchen workers.

**Women** Since this work involves lifting and carrying foods in heavy bulk quantities, job openings are generally restricted to men.

**FIELDS OF EMPLOYMENT** Kitchen helpers are employed in restaurants, hotels, private clubs, hospitals, schools, industrial cafeterias, and other public eating places.



AREAS OF EMPLOYMENT In 1963 there were over 16,000 kitchen workers employed in Ohio. The greatest concentrations were in Cleveland, Cincinnati, Columbus, Dayton, Toledo, Akron, and Canton (in that order).

REMUNERATION There is a wide variation in salaries among the various types of eating establishments. The current wage rate in Ohio varies from 75¢ to $1.50 an hour.

Kitchen helpers usually receive free or low-cost meals while on the job. They are sometimes provided with free uniforms and free laundering services for the uniforms. The majority of employers give one week of paid vacation after one year of service. Some firms offer medical and life insurance programs; few offer retirement plans other than Social Security.

REQUIREMENTS FOR ENTRY

Selection Factors physical stamina, emotional stability, ability to work well with people, ability to read and write and follow oral directions, interest in food and food preparation, habits of neatness and cleanliness, willingness to work hard Most states require kitchen personnel to obtain a health certificate which attests to freedom from contagious diseases.

Education and Training Generally speaking, there are no formal education requirements. Some employers, however, do require an eighth-grade or tenth-grade education. Literacy is necessary for any advancement.

Public training courses are periodically held for kitchen helper in Ohio. Details may be obtained from the Ohio State Employment Service, Manpower Development Section, 145 South Front Street, Columbus, Ohio 43216.

Union Membership The percentage of unionized restaurants is very small; however, the Hotel and Restaurant Employees and Bartenders International Union is the chief union for kitchen personnel.

WORKING CONDITIONS The workweek varies from 40 to 48 hours, from five to six days a week. Days off are usually weekdays, because weekends are generally the busiest periods. Some establishments operate on a split-shift or two-shift basis.

Work surroundings depend largely on the type of establishment. Large hotels and restaurants are modern, well-equipped, and air-conditioned; small establishments may not be. There are possibilities of injuries from scalds and burns from hot foods and utensils, cuts from knives, and falls on wet and slippery floors.

The kitchen helper spends most of his time standing and doing considerable lifting, carrying, walking, and stooping. He may be subject to odors and fumes from cooking foods. During meal times he works under pressure.

PROMOTION POSSIBILITIES A kitchen helper may advance to specialized food preparer, kitchen steward, pantryman, baker, pastry chef, butcher, fry cook, second cook, and head cook. Bases for promotion include experience, demonstrated ability, and literacy.

PLACEMENT SERVICES Contact the local public employment service office; personnel offices of hotels, restaurants, cafeterias, hospitals, schools, and other eating places; local restaurant association; local kitchen workers' union; private employment agencies.

SOURCES OF ADDITIONAL INFORMATION Council on Hotel, Restaurant and Institutional Education, Statler Hall, Cornell University, Ithaca, New York; National Restaurant Association, 1530 North Lake Shore Drive, Chicago, Illinois 60610; Ohio State Restaurant Association, 40 South Third Street, Columbus, Ohio 43215; Hotel and Restaurant Employees and Bartenders International Union, 6 East Fourth Street, Cincinnati 2, Ohio.

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# EMPLOYMENT INFORMATION SERIES

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## LANDSCAPE ARCHITECT

019.081-014

Revised
Dec.
1960

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Plans and designs all types of land areas for human use and enjoyment. Adapts the physical conditions of a site to the practical requirements of its intended use and appearance, and develops plans suited to the character of the landscape. Studies the topography, water forms, and natural vegetation in relation to the landscape and uses them to produce forms and designs peculiar to landscape architecture such as modeling of ground forms, setting of buildings with regard to topography, use of shrubs and trees as design materials.Makes preliminary studies to determine the kind of development most suitable to the project. Sets forth facts and recommendations in a report, together with a plan of proposed architectural treatment. Prepares working drawings, specifications, detailed estimate of cost, and a schedule of materials required. Draws up contract; may supervise and authorize payments. May specialize in general practice, teaching, research.

OPPORTUNITIES

Current - Outlook for trained landscape architects is favorable at the present time.

Trends - Public buildings (construction of highways, educational and other institutions, etc.)is expected to continue as the predominant user of the services of landscape architects, either as members of private firms with contracts for specific projects, or as employees of government agencies. The increasing tendency to build industrial plants and shopping centers in outlying areas of communities will increase emphasis on need for landscape architects' skills.

For women - The field may be limited by public prejudice in certain localities. However, because of artistic talents necessary, women are often especially adaptable to the work, and some have become outstanding in the field. The small private office offers an opportunity for the woman who is a good draftsman and who possesses office skills as well.

Seasonal factors - Adverse weather conditions often hold up work activity.

FIELDS OF EMPLOYMENT - Landscape architecture firms; government parks, highways, regional and local planning agencies; landscape gradening companies and nurseries; teaching; journalism.

REMUNERATION - For the most part, salaries fall in the $6000-$10,000 range.

# LANDSCAPE ARCHITECT

## METHODS AND REQUIREMENTS FOR ENTRY

Selection factors - Artistic talent; creative imagination; practical judgment; ability to meet and deal with people tactfully; interest in plants, nature. In working for landscape gradeners or nurseries the willingness and ability to help sell is essential.

Training - Usually college graduation with a professional degree in landscape architecture is required for entry into the field. College training emphasizes architecture, engineering, and plant materials in its courses of theory and practice. Most college curricula vary from 4 to 5 years in length.Harvard and Cornell Universities offer a three-year post graduate course for the degree of master in landscape architecture.

Location of Schools - Colleges and universities in this region granting degrees in landscape architecture include: Ohio State University, Columbus, Ohio; University of Wisconsin, Madison, Wisconsin; University of Illinois, Urbana, Illinois; University of Michigan, Ann Arbor, Michigan; Michigan State University, East Lansing, Michigan.

Licenses, examinations, certificates - None required.

WORKING CONDITIONS - Outside and inside activities; travel may be involved when working on out-of-town projects. Landscape architects practicing independently may work long hours, particularly during rush seasons.

AVENUES OF PROMOTION - Most workers start out in this occupation as landscape draftsman, and may be promoted to assistant or principal landscape architect in private firm; landscape architect working independently in developing projects;or to supervisory positions when in government agencies.

FOR ADDITIONAL INFORMATION - Write or contact: any practicing landscape architect in your community; any of the colleges or universities listed above; American Society of Landscape Architects, 2000 K Street N.W., Washington 6, D. C. Read: "Landscape Architects" in Occupational Briefs by Science Research Associates; "Landscape Architecture Quarterly".

NOTES - (Additions, local information.)

# EMPLOYMENT INFORMATION SERIES

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## LATHER, CONSTRUCTION

842.781

OCCUPATIONAL RELEASE

July, 1960

NATURE OF WORK - Installs supporting backings (metal lath, pieces of iron or light iron resembling wire netting, or large pieces of perforated gypsum board) on ceilings or walls on which plaster or other materials are often applied. When installing metal lath, first builds a light framework (furring) and fastens it securely to the framing. Attaches lath to the furring by nailing, clipping, or tying. Cuts openings in lath for electrical outlets and heating and ventilating pipes.This method of installation varies somewhat in other types of lath work.For example, for plaster cornices, builds a framework that approximates the desired shape or form for the cornice. Attaches metal lath to the framework. Nails gypsum lath on studs or clips it to the iron furring. Also installs corner beads (metal reinforcement used as corner protection) and similar supplementary items. When applying stucco over wood framework, nails coarse mesh wire to framework, preparatory to plastering. The tools of the trade include measuring rules and tapes, drills, hammers, chisels, hacksaws, shears, wirecutters, boltcutters, punches, pliers and hatchets.

OPPORTUNITIES

Current - Nationally, a moderate increase in employment in this relatively small building trade is expected in the 1960's, principally as a result of the anticipated large expansion in construction activity. Locally, the number of apprentices accepted tends to remain static. For up-to-date information contact local unions, contractors, and local offices of the Ohio State Employment Service.

Trends - Additional lathing work will be needed because of the increased use of acoustical tile for sound insulation, the trends toward suspended and other decorative types of ceilings, and the increased use of lightweight plasters as a fireproofing material for structural steel. These developments may largely offset the loss of lathing work resulting from the increasing use of dry walls, particularly in residential construction where these materials are often installed by carpenters.

FIELDS OF EMPLOYMENT - Most lathers work for lathing and plastering contractors on new residential, commercial, or industrial construction. They also work on modernization and alteration jobs. Some lathers are employed outside the construction industry; for example, they make the lath backing for plaster display materials or scenery.

AREAS OF EMPLOYMENT - Larger urban areas.

## LATHER, METAL AND WOOD

REMUNERATION - 1958 union minimum hourly wages in 52 large cities average--$3.72 per hour. 1960 union wage in representative Ohio area--$3.70 per hour. The seasonal nature of the trade makes annual earnings less than hourly earnings would indicate.

METHOD OF ENTRY - Authorities recommend completion of a 2 or 3 year apprenticeship program as the best way to learn this trade. Many lathers, particularly in small communities, have learned the trade informally.

REQUIREMENTS FOR ENTRY - Apprenticeship applicants generally are required to be between the ages of 16 and 26, and in good physical condition. Aptitude tests are often given to applicants to determine their manual dexterity as well as the other qualifications required for this trade. Although high school education is not required, mathematics courses above grade school level are needed to understand the classroom instruction.

Training - The apprentice learns how to use and handle the tools and materials of the trade.For example, he installs gypsum and composition board, wall furring, and metal lathing. In addition, he generally receives related instruction in subjects such as applied mathematics, geometry, reading of blueprints and sketches, welding, estimating and safety practices.

Union membership - A large proportion of lathers are members of the Wood, Wire and Metal Lathers International Union.

WORKING CONDITIONS - Prolonged bending, stooping, and working in cramped quarters is frequently necessary.

ADDITIONAL INFORMATION - Local contractors, unions, Ohio State Employment Service Office.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

## LAWYER

110.108-010

Revised
January
1961

## OCCUPATIONAL RELEASE

NATURE OF OCCUPATION - Is an officer of the court authorized to explain law to clients and to represent them in court. Duties include giving clients the benefit of advice on all legal rights they enjoy in connection with the problems they bring him. Is sworn to conduct his cases in an orderly manner and may not make any agreements or incur any obligations which might jeopardize his clients' interests. May help persons who have problems, or may perform an act of law. Advice on legal problems may take the form of telling a client what to do, or what not to do. Prepares written instruments, such as contracts and deeds. May settle disputes out of court. Represents clients in civil court disputes over property, money damages, or determination of family relationships.

Is usually involved in clients' buying or selling real estate, signing contracts, tax and estate problems, making a will, accidents involving damages to persons or property, and opinion-rendering on titles to real estate, business organizations, and domestic difficulties.

May act primarily as trustee, judge, executor, law professor, legal writer, editor, or prosecutor. May limit practice to trial work or specialize in out-of-court negotiations and legal research for trial lawyers. May act as an attorney for a government agency, which may include drafting proposed laws and enforcement procedures.

May enter a related field which requires a knowledge of law, becoming an FBI agent, insurance adjuster, tax collector, probation officer, credit investigator, accountant, or claim examiner.

### OPPORTUNITIES

Current - Best in non-salaried private practice in less populated areas. Fewer, but good opportunities in non-salaried private practice in more populous areas. Salaried positions in private practice, as law clerks serving judges, or in private industry depend on being a graduate of a widely recognized law school or being graduate in the top 10% of law school class. Graduates of less well-known schools and those with lower academic ranking may qualify for the numerous salaried positions in local, State or Federal Government agencies, or in industry and business in other than legal departments.

Trends - As law graduates migrate to more populous areas, outlying areas should offer plentiful opportunities in private practice. Demand is expected to increase gradually over the long run as a result of business and population expansion, more complex legislation, and the growing complexity of business and governmental positions.

# LAWYER

Women - Constitute less than 3% of the profession and proportion likely to remain small. Acceptance in government employment and certain areas of specialization in probate and juvenile court work; prejudice against their employment remains high both inside and outside of the profession.

FIELDS OF EMPLOYMENT - Private practice--80%. Remainder: government, companies and industries, education.

AREAS OF EMPLOYMENT - Concentrated in cities and States of greatest population.

REMUNERATION - Beginning salaries generally highest in large law firms and federal agencies. In private practice, may make little more than expenses during the first few years. Outstanding exception--lawyers who have, as pre-law background, education in engineering or the technical fields. Earnings usually rise with experience and private, non-salaried practice generally outstrips salaried income in 8 or 10 years.

ENTRY METHODS AND REQUIREMENTS - For private practice, should be motivated by the desire to "be his own boss." Must be able to inspire confidence in others. Good intelligence and alertness and sense of integrity and responsibility, are among the qualities necessary.

Education - Ohio: 7 years' full-time study after high school; 4 years of college work with B.A. degree- 3 years' full-time law school work. Specific college subjects are not generally required for law school entrance. For information on other States, write to their Supreme Courts.

Of the 158 law schools in operation in 1958, 129 were approved by the American Bar Association and the others--chiefly night schools--were approved by State authorities only. In night schools, at least 4 years' part-time study is usually required.

Admission to better ranked law schools is becoming more difficult with better-than-average academic record and standard law aptitude tests required. Many applicants may not be accepted by the schools of their first choice. Law schools base selections on college grades, college attended, recommendations of college professors, and evidence of good character.

The degree of bachelor of laws (LL.B.) is awarded upon graduation. A few schools confer the degree of juris doctor (J.D.) to students who have attained high scholastic ranking. Advanced study is available for those planning to specialize, engage in research, or teach in law school.

Admission to Bar - Ohio: (1) Pass examination on general law covering specified subjects and elective areas; (2) Be U.S. citizen and 21; (3) B.A. from approved college; 30 semester hours or 45 quarter hours minimum credit per year; (4) Register as law student with court within 120 days of commencement of law study; (5) Ohio resident 6 months prior to taking bar examination; (6) Graduate of approved law school; (7) Satisfy character examination committee and court as to good character.

WORKING CONDITIONS - At times, long hours and intense pressure.

AVENUES OF PROMOTION - Most beginning lawyers start in salaried positions, although some go into independent practice immediately after passing the bar examination. In salaried employment, gain experience, funds, and becomes well-known; then many go into practice for themselves.

ADDITIONAL INFORMATION - The American Bar Association, 1155 East 60th St., Chicago 37, Illinois; Ohio State Bar Association, State House Annex, Columbus 15, Ohio; Dean, College of Law, Ohio State University, Columbus 10, Ohio.

NOTES - (Local opportunities, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
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## LIBRARIAN
100.168-026

Revised
June,
1960

### OCCUPATIONAL RELEASE

NATURE OF WORK - Makes knowledge and information available to the public through printed or recorded materials such as books, periodicals, pamphlets reports, microfilm, phonograph records, motion picture film, maps and pictures. Selects and purchases books and other materials; classifies, catalogs, and circulates books and other loan items; publicizes library services; investigates the reading interests of the community to meet their needs; does research to secure facts or information requested; and provides reference service to guide readers of all ages to books and information suited to their individual interests.

Also, collects, reviews, and abstracts published and unpublished materials in order to prepare bibliographies and book reviews.May serve as adviser to schools or business organizations on bibliographies and references for research. May work with community groups, providing information and resource materials for projects.

In a small library, may perform all of these duties; in a large library, different librarians may handle each function, or may specialize in a particular subject-matter area, such as science, business, the arts,or children's books.

The chief librarian must, in addition, prepare the library's annual budget gain acceptance of the budget, employ and supervise a staff, handle complaints regarding censorship, and perform these duties within the framework of legal requirements for operation of public institutions.

Some public and private libraries are devoted entirely to special subject-matter collections, such as scientific research, insurance data, or government materials for employing organizations. These libraries employ special librarians who, in addition to their regular duties, are often expected to take the initiative in furnishing information of particular interest providing researdh services to the firm's or agency's administrative, management, or public relations offices.

A growing number of extension-service librarians work toward setting up and improving public libraries in areas where such services are inadequate or nonexistent.

OPPORTUNITIES

Current - The shortage of well-trained (master's degree in library science) librarians continues and is growing more acute. The State Library of Ohio with headquarters at 65 South Front Street (State Office Building) in Columbus, offers a free placement service to assist all the libraries in the State to fill positions requiring professionally trained personnel. Its 1960 listing of opportunities reveals a wide variety of openings, both as to level and type.

Trends - In all probability the shortage of librarians will be even more acute in the 1970's than today. Library service, as a part of the American educational process, shares in the greater emphasis and speed-up in this field.

For men - Increased salaries and opportunities for advancement have been attracting more men.

FIELDS OF EMPLOYMENT - Public libraries; public and private school, college and university libraries; government agencies (including State libraries), research associations, medical institutions, and business and industrial firms. Also, teaching and administrating in schools of library science. The majority of librarians are employed in public libraries or in the libraries of public schools.

AREAS OF EMPLOYMENT - Nation-wide and State-wide. The State Library of Ohio lists openings in many areas of the State--urban, suburban, and rural. Ohio has 270 public libraries, 55 college and university libraries, and 100 special libraries serving business, industry and law. Besides main libraries there are 336 branches and 81 bookmobiles.

REMUNERATION - Beginning salaries for professionally trained librarians with the master's degree from an accredited library school range from $4000 to $6000 a year in Ohio. (There are a few exceptions at either end.) The average salary is $4500 per year in public libraries. Nationally, special librarians have been starting at $4200-$4500 a year, technical librarians at $5000 a year. Top level positions for experienced personnel have been paying from $8000-$12,000, and sometimes approached $20,000.

METHOD AND REQUIREMENTS OF ENTRY - 4 years of undergraduate training in library science is needed to qualify for positions in small libraries. However, full-fledged librarian recognition is seldom given until the master's degree from an accredited library school has been achieved. Entrance requirements for professional (graduate) library schools commonly include: (1) graduation from an approved 4-year college or university; (2) a good undergraduate academic record; and (3) a reading knowledge of at least one foreign language. Most schools do not require previous training in library science.

A person who intends to make a career of librarianship is well advised to seek the master's degree, and it is becoming increasingly desirable to go on for the Ph.D. if the intention is to teach librarianship, hold top level positions in college and university libraries, or to qualify as s subject specialist. (The ideal combination for the subject specialist is the Ph.D. in a subject field combined with a master's degree in library science.)

Scholarships are now available at virtually all library schools and are increasingly plentiful.

Certification, requiring different combinations of education and experience, is a requirement for public librarians in 22 states. This is not ordinarily true in Ohio. However, the chief librarians of county district libraries must be certified by the Ohio State Board of Library Examiners.

Western Reserve University in Cleveland has the only school of library science in Ohio. For a list of Ohio schools offering majors in this training, see Part V of the Training Directory.

ADDITIONAL INFORMATION - Local libraries, The State Library of Ohio in Columbus; American Library Association, 50 East Huron St., Chicago 11, Illinois; Special Libraries Association, 31 East 10th St., New York 3, N.Y. U.S. Dept. of Health, Education, and Welfare, Office of Education, Library Services Branch, Washington 25, D.C.

NOTES - (Local opportunities, etc.)

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## MACHINE MOLDER

518.782-010

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October
1963

NATURE OF THE WORK - Makes and finishes sand molds into which molten metals are poured to form castings, by operating the control levers or pedals of one or more types of molding machines. Assembles the flask (molding box), positions the pattern into the flask, fills the flask compactly with specially prepared sand, and forms the mold by operating a molding machine. Withdraws the pattern from the mold, repairs any damage to the surface of the pattern impression, sets and anchors the cores necessary to form internal surfaces of castings, replaces the cope on the drag, closes the mold with clamps, and places the mold on the floor for pouring. May pour molds or direct this operation. May be a journeyman molder who sets up and adjusts his own machine with little supervision;or a semi-skilled worker limited to the operation of a machine which has been set up for him.

OPPORTUNITIES

Current - Retirements, deaths, and transfers to other fields of work will provide the majority of annual openings. The trend toward mechanization has created a greater need for machine operators; thus, more opportunities are available for entry workers in machine molding than in the less skilled types of hand molding.

Trends - It is not anticipated that the total number of machine molders will increase appreciable during the coming decade, although foundry production is expected to show considerable growth. The noticeable trend toward machine molding will result in a greater output per molder; consequently, fewer workers will be needed to produce the number of castings required.

FIELDS AND AREAS OF EMPLOYMENT - Machine molders are employed by both jobbing and production foundries; however, the majority are located in production foundries which make large quantities of identical castings. Workers are usually found in the more prominent metal working centers of Ohio; although, a number are employed by small and medium-sized foundries scattered throughout the state.

REMUNERATION - The starting salary for beginning workers usually ranges between $1.50 and $2.19 per hour. With experience the machine molders will earn a straight-time hourly wage ranging from $2.43 to $2.87. In addition, large foundries may offer an incentive wage plan which will enable their employees to increase their earnings. Extra benefits usually include retirement plans, sick benefits, and insurance plans for their employees.

REQUIREMENTS FOR ENTRY

General - Good judgment, reliability, mechanical aptitude, and a cooperative attitude. Possess the ability to follow written and oral instructions. Where applicable, must meet the standards of the trade as established by the joint apprenticeship council.

# MACHINE MOLDER

Education - High School graduation is usually the minimum educational requirement for apprenticeship in Ohio; although, eighth grade education is usually sufficient for trainees in machine molding jobs. Courses of study in High School should include the following subjects: math, sciences (physics and chemistry), mechanical drawing and shop courses. Where possible it is suggested that courses in foundry practice, patternmaking, general metal work, etc., should be elected.

Training - The more difficult and responsible types of machine molding jobs may require apprenticeship training or its equivalent in informal instruction and experience. The less skilled machine molding jobs are ordinarily learned in 60-90 days of on-the-job training. After this period of instruction the employee is usually an efficient operator in about a month's time.

Physical - Physical stamina, good vision, and a high degree of manual dexterity.

WORKING CONDITIONS - Frequent lifting, considerable standing, and a great deal of movement. Work is fairly strenuous. Will work indoors (8-9 hrs. per week day) and be subjected to uneven temperatures and a dusty atmosphere. Improvements in many new foundries include the reduction of heat, fumes, smoke, and noise. Crushed fingers and burns are the greatest hazards; however, the observance of modern safety regulations have reduced these to a minimum.

Labor Unions - The majority are members of labor unions. Many of them have membership in the International Molders and Foundry Workers Union of North America. Others are members of the United Steelworkers of America; the International Union, United Automobile, Aircraft and Agricultural Implement Workers of America; and the International Union of Electrical, Radio and Machine Workers.

AVENUES OF PROMOTION - May advance along the following lines: Trainee or apprenticeship, machine molder, machine molder foreman. Promotion is based upon experience, ability, and seniority.

ADDITIONAL INFORMATION - Visit local foundries and talk with foundrymen. Become acquainted with foundry associations such as American Foundrymen's Society. Contact local labor unions and the local Ohio State Employment Service office.

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## MACHINIST

**600. -, 601. -,**
**604. -**
**all suffixes**

Revised
December
1962

NATURE OF THE WORK - Completes the operations necessary to construct or repair all kinds of metal parts, tools and machines. Sets up and operates basic metal working machine tools, including the lathe, milling machine, planer, shaper, drill press, and grinding machine. Uses hand tools and measuring instruments such as files, chisels, scrapers, scribers, micrometers, calipers, scales, and guages. Reads and interprets blue prints, sketches and drawings, and dimensions in constructing or repairing a metal part. Uses shop mathematics, tables, scales, and reference books to plan sequence of operations in order to complete the product. Shapes various metals including steel, cast and wrought iron, aluminum, and brass to precise dimensions, within .0001 of an inch.

OPPORTUNITIES

Current - Immediate prospects are good. This vocation is a shortage occupation in Ohio. The need for experienced machinists is expected to rise with the increasing demands for consumer products such as appliances and automobiles, and for industrial goods such as machinery and equipment.

Trends - The outlook for the future is good. Normal turnover of workers, industrial expansion, technological developments, and the national defense program will greatly influence the need for machinists.

FIELDS OF EMPLOYMENT - The majority of machinists are employed in the metal-working industries, mainly in plants which manufacture machinery, transportation equipment such as automobiles and aircraft; fabricated metal products and electrical machinery and equipment. Maintenance shops also employ large numbers of machinists.

AREAS OF EMPLOYMENT - Machinist are employed in almost every locality and industry because their skills are required to maintain all types of machinery.

REMUNERATION - A machinist journeyman usually earns between $2.50 and $3.50 an hour. The rate of pay is dependent upon the size and location of the community and the type of industry. Apprentices start at 50 to 65% of the journeyman's rate of pay, and will receive periodic increases after successful completion of each 1,000 hours of training until apprenticeship is completed. Most workers are provided with paid holidays and paid vacations, some type of sickness or accident insurance and pension plan.

REQUIREMENTS FOR ENTRY

General - Patience, reliability, self-reliance, pride in work, and numerical and mechanical aptitude. Have the ability to follow oral and written instructions, plan a sequence of operations and visualize the finished objects. Possess good eye-hand coordination and be able to work skillfully with the hands. Meet the minimum standards for the trade as established by the joint apprenticeship council. May be required to take an aptitude test.

Education - Must be a high school graduate or equivalent. A four year apprenticeship is usually required to qualify as a machinist journeyman. A few may learn the trade without serving an apprenticeship, but, this method generally takes more than four years. The Apprenticeship program consists of on-the-job training and related classroom instruction. The apprentice receives training in such subjects as blue-print reading, mechanical drawing, shop mathematics, shop theory, characteristics of metals, and the use of precision measuring instruments. Specific on-the-job instruction is given in different hand operations such as chipping, filing, hand tapping, dowel fitting, and riveting; and in the operation of various types of machine tools.

Physical - Good eyesight. Must be in good physical condition as the job requires considerable stooping, turning, reaching, pulling, pushing, and lifting up to 100 lbs.

Equipment Required - Each worker must furnish his own set of small hand tools. These are usually acquired during apprenticeship training and may be valued from $500 to $1,000. Large and special tools are supplied by the employer.

WORKING CONDITIONS - Usually work with and around other employees in well lighted and ventilated area. May get dirty or greasy while handling stock and setting up machines. Workers stand at machines or work benches most of the day and move about frequently. The possibility of injury is slight if proper safety instructions are followed when handling tools and operating machines.

AVENUE OF PROMOTION - May be promoted from machinist journeyman to foreman of a section or other supervisory jobs in production or maintenance. With additional training may become tool and die makers or instrument makers. Promotion is based upon experience, skill, and supervisory ability.

FOR ADDITIONAL INFORMATION - Write or contact: Bureau of Apprenticeship representative for your area; local OSES office; local machine shops; local representatives for any of the unions listed below:

International Association of Machinist.
International Union, United Automobile, Aircraft, and Agricultural Implement Workers of America.
International Union of Electrical, Radio and Machine Workers.
United Steelworkers of America.
Mechanics Educational Society of America.

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## MAIL CARRIER

233.388-010

Revised
January
1963

**NATURE OF THE WORK** - Responsible for the prompt and efficient delivery of mail in an assigned area either on foot or by motor vehicle. Sorts and arranges mail in an orderly sequence for delivery. Records changes of addresses, and readdresses or otherwise marks the mail of persons who have moved. Assembles arranged mail into bundles, fills satchel with one bundle and dispatches the rest by truck to storage boxes located at intervals along an assigned route. Collects charges on C.O.D. and postage-due mail. Obtains receipts for registered and insured mail. Collects mail from street letter boxes and office building chutes. Delivers parcel post or prepares notice indicating where the parcel is being held. In addition to the above duties the rural carrier provides some of the services which are available in post offices, such as: selling stamps and money orders, accepting parcel post, letters, and packages to be registered or insured.

**OPPORTUNITIES**

**Current** - Many openings become available each year as a result of workers leaving the service to enter other fields of work, retirements, or deaths. The increase in post office activities will create a number of positions for mail carriers. Competition for permanent jobs is very great because of the security offered.

**Trends** - The number of openings for mail carriers is expected to increase steadily and substantially as the population continues to expand into the suburban areas, and as business activities increase. The employment of rural carriers is expected to remain fairly stable.

**FIELDS AND AREAS OF EMPLOYMENT** - In all post offices throughout the United States, but concentrated in the larger centers of population.

**REMUNERATION**

**Substitute Carriers** - The beginning salary for substitute carriers is $2.26 per hour. A step increase of 8¢ an hour is given for satisfactory service each year for six successive years, and then every three years for five additional steps until a maximum of $3.14 an hour is reached.

**Regular Carriers** - The entry salary for regular carriers is $4565 per year. A periodic or step increase of $160 per year is received in recognition of satisfactory service for six successive years, and then every three years for five additional steps until a maximum of $6325 is reached. If the hours of work exceed eight (8) hours a day the employee will receive overtime at the rate of time and one-half. Extra benefits for substitute and regular employees include thirteen (13) days sick leave per year, paid vacations, uniform allowances, retirement and survivorship benefits, and optional participation in group life and health insurance programs.

REQUIREMENTS FOR ENTRY

General - Must be a citizen of the United States, at least 18 years of age, pass the federal civil service examination for clerk-carrier. The civil service examination covers the following areas: general intelligence, reading accuracy, and the ability to follow instructions. Must take a road test to demonstrate their ability to handle vehicles of the type and size that he (she) may be required to operate as a carrier. Are subject to an investigation of moral character and loyalty. Should be pleasant and tactful in dealing with the public; present a neat appearance, and possess a good memory. May have to live in the area served by the particular post office. Upon satisfactory completion of a one year probationary period the appointment as carrier becomes permanent.

Education - No formal education or special training is required for employment as a mail carrier. Most of the applicants who have been appointed in the past few years, however, have been high school graduates. On-the-job training is generally provided by the immediate supervisor or other experienced employees.

Physical - Must pass a physical examination to determine whether they are capable of with-standing the strenuous physical exertion required. Eyesight must be at least 20/30 in one eye. Men must weigh at least 125 lbs. This weight requirement may be waived for those who can pass a strength test. There is no weight requirement for women. Must be able to stand for long periods of time, walk considerable distance, and handle heavy sacks of mail.

AVENUES OF PROMOTION - Workers entering this field begin as substitutes. Upon attaining regular status the employee may be promoted from this position to carrier foreman, route examiner, or other supervisory position. There are very few opportunities for promotion. Merit is the controlling factor in advancement to higher positions. Qualifications necessary for promotion may include experience, training or education, aptitude, work performance, and personal characteristics.

SOURCES OF ADDITIONAL INFORMATION - Write or contact: your local post office; U.S. Civil Service Commission, Post Office and Courthouse Building, 5th and Walnut Streets, Cincinnati 2, Ohio; local office of the Ohio State Employment Service. Read: Post Office Occupations, Occupational Outlook Handbook, Bulletin No, 1300, United States Department of Labor, Washington 25, D. C.

# EMPLOYMENT INFORMATION SERIES

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## MANAGER, BRANCH STORE

290.468-014

Counter Clerk
Receiving Checker
Marker

May
1960

## OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - Since the duties of these occupations overlap, they are grouped together for convenience in this release. The **Branch Store Manager** may perform all of the duties included in the other three occupations listed, plus some additional tasks. The size of the store is usually the determining factor, with more job specialization resulting from larger volumes of work handled. The Branch Store Manager cares for a store conveniently located where customers can deliver and call for articles to be processed. Receives articles from customer. Writes out an identifying slip or tag containing information, such as name of customer, work to be done, and date or completion. Pins or staples tag to articles. Delivers finished articles to customer and collects amounts due. Keeps simple records pertaining to cash receipts and articles received and delivered. May examine articles in presence of customer. May advise customer of possible shrinkage, loss of shape, fading or other damage that might result to the article during processing. May measure garments with a tendency to shrink. May remove ornaments from articles and sew or replace them on finished garment when it is returned from the plant.

**The Counter Clerk or Receiving Clerk II** (1-34.04) receives articles to be processed from customers and routeman. Records information such as owner of articles, price of work, kind of work to be done, and order number. Writes order slips containing order number and other information and pins slips on articles. Checks incoming articles against list of customers or routeman. Examines articles for defects and makes notation of defects or notifies customer. May place finished articles in plastic bags and deliver to customers who call at the plant. May remove buttons, ornaments and other trimmings from garments. May keep simple records pertaining to articles handled and cash receipts.

**The Receiving Checker** (7-75.002) examines garments for holes, stains and other defects, and makes notation of defects found or notifies customer to prevent possible damage claims. Performs miscellaneous tasks such as removing buttons and ornaments from garments, and sorting soiled garments. May be designated according to kind of garments inspected, such as Silk Inspector.

**The Marker** (6-27.042) affixes or marks customer identifying symbols on soiled garments or other articles received in cleaning and pressing establishments before the article is processed, and operates machine which marks garment or tag, or writes on tag and affixes it to garment. May group articles from one customer into bundle or net bag, and close each bag with key tag or identifying safety pin. May be designated according to type of article marked. May count and inspect articles to verify order slips accompanying bundles. May keep simple records pertaining to articles received, such as entering number of pieces, kind of articles and code number in record book. May sort incoming soiled articles. All personnel in synthetic solvent shops are trained in all of the above duties.

OPPORTUNITIES

Current - There are no sharp shortages or oversupplies reported in these occupations at the present time.

Trends - The dry cleaning industry will share in the increased business caused by the rising population. However, no sharp deviation from the current picture is anticipated.

AREAS OF EMPLOYMENT - Almost every Ohio community has its cleaning establishments from pick-up and delivery locations in small towns served by truck routes, to the extensive, large establishments in the cities. Hundreds of neighborhood shops are operated in the shopping centers, prevalent over the State.

REMUNERATION - Counter Clerks, Receiving Checkers and Markers receive wages averaging from $40.00 to $60,00 a week, based on a forty-hour week. Branch store manager salaries start at approximately $60.00 a week.

METHOD AND REQUIREMENTS FOR ENTRY - No previous experience is required for Counter Girls, Receiving Checkers and Markers. They can be trained on the job in a short period of time. Those dealing in customer-contact work should have a pleasing personality. Other necessary qualities in these occupations include accuracy for recording information, good eyesight and color discrimination for checking completeness of cleaning and re-attaching buttons and ornaments, and good tactile sense, as an additional aid in identifying types of fabrics.

Ability to stand for long periods of time is necessary. Branch Store Managers are generally selected from Counter Clerks and Receiving Clerks who have become acquainted with the various responsibilities of the position and have shown proof of their ability to carry them out.

WORKING CONDITIONS - Generally clean, well-lighted and well ventilated. May be humid and odor of drycleaning solvents may be present if pressing and dry cleaning equipment is located close to the counter area. Peak workload periods occur in the Spring and Fall.

AVENUES OF PROMOTION - From Counter Clerk, Receiving Checker or Marker to Branch Store Manager. From Branch Store Manager to Owner, Superviser or Public Relations.

UNIONS - International Association of Cleaning and Dye House Workers or the Amalgamated Clothing Workers of America. Many workers are not unionized.

FOR ADDITIONAL INFORMATION - Check local dry cleaning establishments and write to the National Institute of Dry Cleaning, Silver Spring, Maryland.

NOTES -(Additions, local sources, rates of pay, training opportunities, etc)

# EMPLOYMENT INFORMATION SERIES

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## MANAGER, FARM
409.168-010

Revised
October
1960

## OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - This is dependent on the size of the farm, or farms, involved. The duties of the farm manager may vary from engaging in a considerable amount of physical labor to no physical labor at all, with his time almost completely taken up with administrative office duties. Today's professional farm manager increasingly belongs to the latter class, combining the talents of the administrator and agriculturist.

On a farm of large acreage, or group of farms, organizes and administers the work; plans months and years ahead for the use of the land, the planting and harvest schedules, labor needs, and in some cases, the marketing of products. Is concerned with the financial management of the farm, keeping records, purchasing equipment and supplies, although an accounting firm may handle books and records for the farm's ownership.

Latitude of authority is dependent on ownership. May be given free hand to run farm in accordance with his best judgment, guided by a budget allowing him some discretion. Or, may work closely with owner and work within the bounds of a specific budget.

May be in charge of several farms for a company that has extensive land holdings. In such a job, travels from farm to farm supervising the activities of each assistant manager or foreman.

**OPPORTUNITIES**

**Current** - There are more openings than there are qualified graduates on a national scale.Locally, however, one farm management company reports that, "Opportunities are not as plentiful as they were immediately following World War II. There are still opportunities, but they have simply leveled off. We get more applications than we have openings."

**Trends** - The relatively small number of college graduates who have the variety of abilities needed for this occupation make it seem likely that this field will not be over-crowded in the next 10 years. As farms become larger, agricultural graduates with training in science and business as well as technical agriculture will be in demand.

**FIELDS OF EMPLOYMENT** - Private; farm management companies; industrial firms; insurance; building and loan companies and banks.

**AREAS OF EMPLOYMENT** - In Ohio, dairy, livestock, poultry, cash crop, fruit and vegetable farms.

**REMUNERATION** - Depends on size or number of farms; demonstrated ability; training, and experience; nature of service rendered; and market prices.

Farm management organization salaries range from $325 to $800 per month. Private owners pay salaries ranging from $280 to $600 per month. Arrangements for living quarters, food, share of profits, etc., may be included.

**METHODS AND REQUIREMENTS OF ENTRY** - High school preparation should include courses in agriculture if possible, as well as courses in science, chemistry, biology, mathematics and business. Active membership in organizations such as 4-H clubs or the Future Farmers of America may also provide valuable preparation.

College study in the field of agriculture in addition to practical farm experience is highly desirable. Applicants with broad training in the field of agriculture with emphasis on farm management, marketing, and business administration are desirable. Courses should include agronomy, horticulture, animal, dairy, and poultry husbandry, agricultural engineering, etc., in addition to those in agricultural economics.

**Schools** - The Ohio State University in Columbus is the only approved school in Ohio offering a complete study of agriculture.

**Selection Factors** - High degree of integrity, intelligence and sense of leadership; unusual amount of sound judgment and mature viewpoint; must understand market trends, farm organization and maintenance, finances and taxes; and be familiar with all new developments in agriculture. Good physical health is also required.

**WORKING CONDITIONS** - The farm manager often lives on the farm, usually in a dwelling provided by the owner. In cases of supervision of several farms, may live in a nearby town and farm management organization may provide him with a business car, or even an office and clerical help if necessary. Heavy physical labor may be necessary during the training period.

Tenure of job is likely to be directly related to the farm manager's success in overall management.

**AVENUES OF PROMOTION** - Generally starts as a trainee or hired manager on a single farm, or as a tenant-operator. Advances to managing a larger farm or a number of farms, becoming farm owner-operator, taking an administrative job with a farm management company, or starting his own farm management organization.

**ADDITIONAL INFORMATION** - College of Agriculture, 2120 Fyffe Road, Ohio State University, Columbus 10, Ohio; farm management companies; Federal Extension Service, U. S. Department of Agriculture, Washington 25, D. C.; County Extension Agents in each county of Ohio and other states.

**NOTES** - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service

MANAGER, HOTEL
187.118-030

## OCCUPATIONAL RELEASE

Manager,
Catering 0-71.15
Promotion 0-97.63

June,
1960

**NATURE OF THE WORK** - Hotel managers have overall responsibility for hotel operations. Within the framework of policy set by owners or boards of directors, they direct and coordinate the activities of the front office, kitchen and dining room and the various departments such as housekeeping, service, accounting, personnel, purchasing, publicity and maintenance.They make decisions on room rates, establish credit policy, introduce improvements in operations, and assume final responsibility for settling guests' complaints. As hosts, hotel managers are responsible for directing their staffs in giving maximum satisfaction to guests while maintaining profitable policies. They may also spend considerable time conferring with business and social groups and participating in community affairs, in order to increase their hotel's business.

In small hotels the manager may perform much of the front office clerical work in addition to his administrative duties. In the smallest hotels, and in many motels, the owners, sometimes a husband and wife team, manage the business alone.

The general manager of a large hotel may have several assistants,each with an assigned area of responsibility. An executive assistant may manage one or more departments and take over general administrative responsibility when the manager is absent. Food preparation and service is so important that it generally rates a special manager. Large hotels usually employ a special manager. Large hotels usually employ a special assistant known as a sales manager, whose job it is to promote maximum use of hotel facilities. He travels extensively explaining to various groups the facilities his hotel can offer for meetings, banquets and conventions.

Hotel chains often centralize certain activities such as purchasing supplies and equipment and planning employee training programs; managers of these hotels may have fewer different duties than managers of large independently owned hotels. The manager in a hotel chain may be assigned on a temporary basis to help organize work in a newly acquired hotel, or may be transferred to established hotels in different states or in foreign countries.

**OPPORTUNITIES**

**Current** - Opportunities will be good but competition keen for the few managerial position openings annually in the early 1960's. There will be more openings for assistant managers.

**Trends** - A moderate increase in the number of managers employed is predicted in the long run.

**FIELDS OF EMPLOYMENT** - Large and small hotels.

# MANAGER, HOTEL

AREAS OF EMPLOYMENT - Nation-wide and State-wide.

REMUNERATION - Management trainees who had graduated from colleges which offer specialized hotel management programs had beginning salaries of $3600 or more in 1958. Increases are usually given trainees periodically for the first year or two, and thereafter may be granted as the employees are shifted to positions of higher responsibility. Managers with several years of experience may have double or triple beginning salaries.Managers and their families are generally furnished with lodging in the hotel, meals, laundry, and other services.

METHOD OF ENTRY - Individuals who have proved their ability, usually in front office jobs, may be promoted to assistant manager positions and eventually to general manager.

REQUIREMENTS FOR ENTRY - Previous hotel experience, and particularly in the accounting department and/or formal training are necessary.Personal qualifications include a pleasing personality, neat appearance, and a liking and understanding of people.

Education - Employers are placing increasing emphasis on a college degree. Many employers believe the best education preparation is obtained from the few colleges in the country offering a 4-year curriculum in hotel administration, including study in the field of food management. In addition to taking a wide range of courses, these students must also spend 3 summers working in hotel or restaurant jobs. Some large hotels provide financial assistance to outstanding employees for college study. Also, specialized courses are available in a few junior colleges--home study courses given by the American Hotel Institute are helpful. Ohio State University and Ohio University offer programs combining courses in business administration and food management which give basic preparation for this field.

Training - Trainees usually start in front office jobs and advance to assistant manager positions as they show progress and openings occur. Some hotels have developed special training programs for managers, with a planned rotation of work assignments.

WORKING CONDITIONS - The manager or assistant manager usually has a regular work schedule, but is on call at all times. Assistant managers in particular may be assigned to any one of 3 shifts, starting early in the morning, mid-afternoon or midnight.

ADDITIONAL INFORMATION - Local hotels, American Hotel Association, 221 West 57th St., New York 19, N.Y.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## MANAGER, PERSONNEL

166.118-022

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October
1960

__NATURE OF WORK__ - Develops techniques, policies, procedures, and practices designed to procure, develop, maintain, and utilize a working force. May be the only man in department or may be in charge of several hundred employees. Levels of responsibility range from routine administrative activities to policy-making. May have limited or frequent contact with employees, union officials, school personnel, and officials of community and other organizations.

Directs the activities involved in performing the following functions. __Employment__ - locating sources of labor supply, recruiting, interviewing, testing, selecting, placing, and inducting. __Training__ - helping to set up on-the-job training, courses, conferences, lectures, etc. __Salary administration__ - setting up standardized scales, methods of determining increases, cost-of-living adjustments, incentives, overtime pay, profit sharing or bonuses. __Setting hours of work__. __Performance or merit ratings__ - made out by immediate supervisors for determining salary increases, need for further training, potential for future, etc. __Employee promotions and transfers__. __Grievances__ - procedures for handling. __Employee services__ - cafeteria, rest periods, recreation, clinic, service awards, etc. __Insured employee benefit programs__ - life insurance, disability income and medical care coverages, retirement income benefits. __Time allowances__ - extended illness, sickness in family, etc. __Holidays__. __Vacations__. __Military service__ - reemployment rights and provisions for "reserve" training. __Plant safety program.__ __Termination__. __Job control__ - continuous inventory of all authorized positions so that number of filled and unfilled jobs is known at all times. __Communications__ - bulletin board, company magazine, suggestions, staff or group meetings (which may also have a training function), new employee discussion, company handbook, policy manual, annual report to employees, public address system. __Personnel records__ - for routine reference, and research and statistics.

Labor relations are a major concern since union-management contracts spell out specific details on many of the above functions.

Personnel responsibilities of line and other executives are not supplanted by the personnel department - it is the accessory rather than the main vehicle of labor-management relations.

__OPPORTUNITIES__

__Current__ - Competition is keen. In-service training programs conducted by large companies and Federal Government agencies are providing some opportunities for junior personnel workers.

__Trends__ - A gradual increase in the demand for personnel workers is expected. Specialized areas--employee relations, psychological testing, and in-service training are expected to grow markedly. Extension of employee services and normal replacement needs should provide some openings.

__For women__ - Advancement opportunities limited, but best in organizations employing large numbers of women.

FIELDS OF EMPLOYMENT - Nearly all types of business enterprises and government agencies. Allied work: teaching personnel administration, industrial relations, and related subjects. Also, independent work as management consultant or labor relations expert.

AREAS OF EMPLOYMENT - The majority of personnel workers are located in big cities and in the highly industrialized sections of the country. Decentralization of industry is creating more opportunities removed from large population centers, however.

REMUNERATION - Beginning salaries for men college graduates in professional personnel positions in large companies averaged $4800 annually in 1958. Personnel directors, industrial relations directors, and others in top positions averaged $12,000 per year in 1958. The range began at less than $5000 in some small companies and reached higher than $60,000 for vice presidents in charge of personnel or industrial relations in some giant corporations.

ENTRY METHODS AND REQUIREMENTS - A college education is increasingly important. Many personnel executives have entered the field from production, sales, or clerical jobs, and some still do in private industry. The Federal Government generally requires a bachelor's degree.

Recommended college courses include personnel management, business administration, public administration, applied psychology, statistics, economics, labor problems, labor legislation, time and motion study, political science, sociology, English, and public speaking. Some employers prefer graduates who have majors in personnel administration; others prefer a general business administration background. For government service, majors in public administration, political science, or personnel administration are recommended.

Jobs involving testing and counseling often require a bachelor's degree with a major in psychology, or a graduate degree in this field. An engineering degree may be needed for work dealing with time study or safety standards, and a degree with a major in industrial relations may be helpful for work involving labor relations. Accounting and law backgrounds are useful in dealing with wages, pension, and other employee benefit programs.

Qualities important for success - Ability to speak and write effectively. More than average skill in working with people of all levels of intelligence and experience, and at all levels of management. Ability to plan, organize and control the work of others. Should have a liking for detail, a high degree of persuasiveness, and a pleasing personality.

AVENUES OF PROMOTION - In a small firm, may have to move to another firm offering more potential. In some firms, is in a good position to become plant manager. In a large corporation, may be promoted to personnel manager's job in a more important plant, then to regional director of personnel and finally to the top post at the headquarter's office. In a central administrative office may be advanced to other managerial work carrying more responsibility. If firm has an overall industrial relations department, may some day head that department.

ADDITIONAL INFORMATION - See Part V Training Directory, Employment Information Series, for a list of Ohio colleges offering a major in this field. Also, contact The American Society for Personnel Administration, Kellogg Center, East Lansing, Michigan; Public Personnel Association 1313 East 16th Street, Chicago 37, Illinois; American Society for Public Administration, 6042 Kimbark Avenue, Chicago 37, Illinois.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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OCCUPATIONAL RELEASE

MARBLE
SETTER

861.381-042

July,
1960

Tile Setter 5-24.410
Terrazzo Worker 5-24.510

NATURE OF WORK - Marble setters, tile setters, and terrazzo workers cover interior or exterior walls, floors, or other surfaces with marble, tile, or terrazzo. These are distinct trades. Craftsmen in each trade work primarily with the material indicated by their title.

The tile setter attaches tile (a thin slab of baked clay, stone or other material) on walls, floors, or ceilings according to blueprints, or other instructions. For walls, and ceilings, applies a plaster coat and then a layer of cement to the surface or other supporting backing, such as plaster board or metal lath. Then taps tiles into place with a trowel or handle. In laying tile floors, adds cement to the fresh concrete subfloor and then lays the tile. Chips the tile with a hammer and chisel or cuts it with a blacksmith's pincers to make it fit into irregular areas, into corners, or around pipes.Small tiles, such as those laid in bathrooms, are available in paperbacked strips and sheets that can be fastened to the floor as a unit, using cement, various types of adhesives, or mastic. This eliminates the need for the setting of individual tiles.

The terrazzo worker is a skilled craftsman who works with terrazzo which, essentially, is a type of ornamental, nonstructural concrete in which marble chips are used as the coarsest ingredient. The terrazzo is ground and polished after hardening to give a smooth surface in which the marble chips are exposed against the background of other materials. Starts work by laying a base (first course) of fine, fairly dry concrete, leveling this accurately with a straightedge (long flat board), and tamping it.Then places metal strips wherever there is to be a joint, or a change of color between panels, and imbeds their bottom edges in the first course. If there is to be lettering or an ornamental figure, also imbeds a shop-made mold. Then mixes the top course of concrete, pours it onto the base course, and rolls and levels it. There is a separate mixture for each color.After the concrete has hardened for a few days, a semi-skilled worker grinds and polishes the floor with an electric-powered grinding machine until the surface is smooth and level.

The marble setter installs marble, shop-made terrazzo panels, and artificial marble and structural glass when it is used in the interior of a building. Does little fabrication work because the marble and other materials are cut to size and polished before they are delivered to the work site. May have to do some minor cutting to make the materials fit exactly.In setting marble, lays out the work, then applies a special plaster mixture to the backing material and sets the marble pieces in place. When necessary, braces them until the setting plaster has hardened. Pours special plaster into the joints between the marble pieces, and points up (slightly indents) the joints with a trowel or wooden paddle. May drill bolt holes if attachments to the marble are necessary.

OPPORTUNITIES - Nationally, employment in these small trades is expected to increase during the 1960's, primarily because of the anticipated large growth in new building construction. Openings for terrazzo workers are expected to increase faster than for marble setters and tile setters because of terrazzo's durability, attractiveness, and popularity. Because of post-war shortages some terrazzo workers have been imported from abroad. Marble setter employment should remain constant. Growth in employment for tile setters will be limited by the increasing use of competing materials. Local conditions vary widely. For up-to-date information contact local unions, contractors and Ohio State Employment Service local offices.

FIELDS OF EMPLOYMENT - New building construction.

AREAS OF EMPLOYMENT - Larger urban areas.

REMUNERATION - 1958 survey of minimum union rates in 52 large cities--$3.62 per hour for marble setters and terrazzo workers and $3.50 per hour for tile setters. 1960 union rate in representative Ohio area for all three trades--$3.50 per hour.

METHOD OF ENTRY - Training authorities recommend completion of a 3-year apprenticeship in each of these distinct trades. A substantial proportion of these workers have learned these trades informally.

REQUIREMENTS FOR ENTRY - Apprenticeship applicants generally are required to be between the ages of 17 and 22; a high school education or its equivalent is desirable. Good physical condition and manual dexterity are important assets. Applicants should have an eye for quickly determining proper alinements of tile, terrazzo, and marble, and a good sense of color harmony.

Union membership - A large proportion of the workers in each of these trades are members of one of the following unions--Bricklayers, Masons and Plasterers International Union of America; International Association of Marble, Slate and Stone Polishers, Rubbers and Sawyers, Tile and Marble Setters Helpers and Terrazzo Helpers; and Operative Plasterers' and Cement Masons' International Association of the United States and Canada.

WORKING CONDITIONS - Marble setters and terrazzo workers work both indoors and outdoors, depending on the type of installation. Tile setters work mostly indoors.

AVENUES OF PROMOTION - Skilled and experienced tile, terrazzo, or marble setters may become foremen. Others may be able to start their own small contracting businesses.

ADDITIONAL INFORMATION - Local contractors, unions, Ohio State Employment Service local offices.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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MEAT CUTTER

316.884-018

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March
1960

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Meat cutters divide animal carcasses (beef, veal, lamb, pork) into wholesale cuts at the packing house level or into retail cuts at the retail store level, using one or more of the following implements--knife, cleaver, hand saw, or power saw. An important part of the meat cutter's job is knowing the quality of the meat he handles and knowing the different cuts of meat. The meat cutter in the retail store may occasionally act as a sales clerk in addition to cutting meat, displaying and selling various cuts of meat to the customer. If he is a proprietor of a small shop or a manager of a meat department in a large, independently owned store, the meat cutter buys and prices the meat. In a large chain store, the head meat cutter would act as department manager and would be in charge of the meat department operations, including scheduling of other meat cutters, supervising cutting operations, freshness control, ordering of wholesale cuts, expense control and other duties pertinent to departmental management.

OPPORTUNITIES

Current - Increasing population and higher income have increased meat consumption on the one hand, while pre-packaging has eliminated much "custom" meat cutting on the other. Nationally, several thousand openings occur yearly on the basis of new store openings, death, retirement, and change to other jobs. Opportunities for meat cutter advancement within the field (especially at retail store level) have increased due to greater emphasis on more supervision within large volume meat markets.

Trends - Chief source of openings will continue to be the replacement of existing personnel to maintain the current employment level. No surging expansion of present levels is anticipated; however, some expansion will take place as population increases and more large supermarket operations are built to meet consumer demand. On the other hand, there is also a long range trend toward more centralized cutting operations with less cutting performed at the retail level. (Note: A recent consumer survey recommends a return to more custom meat-cutting in large supermarkets. If this recommendation is acted upon, it would create a new demand for custom meat-cutters who could advise customers on cuts and meat preparation as well as perform the duties described above.)

FIELDS OF EMPLOYMENT - The bulk of meat cutters are employed in the meat departments of both chain and independent grocery stores and in meat markets. Wholesale supply houses hire many meat cutters to divide whole carcasses into quarters for meat retailers who request this service, or to carve steaks, chops, roasts, etc. for restaurants, hotels and institutions. Some of the larger hotels and restaurants employ their own meat cutters instead of buying pre-cut meats. Some meat cutters open up retail stores of their own.

AREAS OF EMPLOYMENT - Largest population centers. Also, wherever food stores are located.

WAGES - Wages dependent upon geographical area, size of market, duties performed, and qualifications required. Beginning apprentice would usually earn $60 for 5-day, 40 hour week in unionized chain store meat department and progress upward on wage scale in $4 to $5 increments each six months as skills developed. A fully qualified journeyman can presently earn approximately $100 per week in most areas. The outstanding journeyman who is promoted to Meat Department Manager can presently earn $110 - $130 per week, depending upon the size of the market he is responsible for.

ENTRY REQUIREMENTS - The meat cutter learns his trade on the job, usually becoming a skilled journeyman after serving a three year apprenticeship. Chain stores and some of the larger independent meat markets have definite training programs for high school graduates, including regular apprenticeships. Many meat cutters pick up the trade as butcher's helpers or as part-time workers in meat markets. Some vocational schools offer instruction in meat cutting, but only a few provide training acceptable to most employers. Even with school training, a period of work experience must follow before a man is considered a fully qualified meat cutter.

WORKING CONDITIONS - Indoors. Working with others. Some mechanical hazards. Air-conditioned working area. Stable work. Infrequent layoffs within field. Clean, attractive, pleasant work area. Diversified duties.

UNIONS - Amalgamated Meat Cutters and Butcher Workmen (AFL-CIO). United Packing House Workers (may be involved in some wholesale establishments).

AVENUES OF PROMOTION - Opportunity exists for outstanding meat cutters to progress into middle and top merchandising management positions with retail supermarket chain stores.

SOURCES FOR INFORMATION - Chain and independent supermarkets, meat markets, packing houses, National School of Meat Cutting, Inc., Toledo 4, Ohio.

NOTES - (Local information sources, wage data, etc.).

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## MECHANICAL ENGINEER

007.081-038

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1963

**NATURE OF THE WORK** - Mechanical engineers design and supervise the manufacture or operation of machinery and other equipment producing, transmitting, or using power. The engineer will cope with problems arising in the production and distribution of goods; the installation, operation, and maintenance of machinery; or in personnel management. Mechanical engineering encompasses four broad areas: 1. The design and manufacture of power producing equipment in the form of steam, hydraulic, internal combustion, and rocket engines, as well as nuclear reactors. 2. The transmission of this power through all types of conveyors, gears, shafts, etc. 3. The equipment utilizing this power in manufacturing of machine tools and specialized equipment for all branches of industry. 4. The fields of (a) heating, ventilating, refrigerating and air conditioning, (b) automotive, and (c) ordnance are significant branches in this occupation. Major functions include research, development, design, testing, manufacture, operation, sales and service, management and teaching.

**OPPORTUNITIES**

**Current** - There is a shortage of mechanical engineers in many industries at the present time because of the decreasing number of engineering graduates, replacement needs, and industrial expansion.

**Trends** - College enrollments are continuing to decline. This drop in enrollment will add to the shortage of qualified engineers. In addition to current industrial needs newer areas such as atomic energy, missile and space craft development, and automation will create additional opportunities.

**For Women** - Because of the current need for qualified personnel and changes in management attitudes the employment opportunities for women have and will continue to improve.

**FIELDS OF EMPLOYMENT** - Mechanical engineers can obtain employment in both manufacturing and non-manufacturing industries, government agencies, educational institutions, and consulting engineering firms. Their work may encompass designing, testing, development, research, sales and service, manufacturing, or management in one of a variety of areas such as: communications; public utilities; transportation equipment; ordnance; engines; machinery and mechanical equipment; heating, refrigeration, and ventilating systems; and chemical, sugar, rubber, and paper industries.

**AREAS OF EMPLOYMENT** - Mechanical engineers work in all parts of the country, in every state and city.

# MECHANICAL ENGINEER

REMUNERATION - The starting salary for mechanical engineers ranges between $500 and $600 per month depending upon the individual's college academic record, type of industry, and size of the community. With ten years experience, they average about $900 per month, and for engineers with 25 years experience, salaries average over $1250 monthly. Factors affecting earnings are experience, type of work, educational level, and individual ability.

REQUIREMENTS FOR ENTRY

General - Possess initiative, ingenuity, patience, persistence, creative and analytical ability, and mature judgment. Capable of written and oral expression, meeting and dealing with people, and using mechanical tools and machines. Good scientific, mathematical, and mechanical aptitudes and a willingness to accept responsibility.

Education - Graduation from an accredited college or university with a degree in mechanical engineering. Technical training includes courses of instruction in the properties and applications of materials used in engineering structures and machines, and the principles and practices of the design of machines and equipment used in the generation, transmission, and utilization of heat and power. The Mechanical Engineering curriculum of each of the following schools has been approved by the Engineers' Council for Professional Development: Case Institute of Technology, Fenn College, Ohio Northern University, Ohio State University, Ohio University, University of Akron, University of Dayton, University of Cincinnati, University of Toledo, and Youngstown University.

Licenses and Registration - Registration is required by most of the states for the legal right to practice professional engineering where public health, life and/or property may be affected by the engineer's work. Requirement for registration and the cost of licensure in Ohio may be obtained from the Professional Engineers and Surveyors Board, 21 West Broad Street, Columbus 15, Ohio.

AVENUES OF PROMOTION - Many large companies start mechanical engineers in training programs that will enable them to obtain practical experience, and afford them the opportunity to apply their theoretical knowledge. After gaining experience in various departments the engineer will be assigned to a more permanent position. Later advancement may lead to positions as assistant engineers, designers, superintendents, managers, or chief engineers.

SOURCES FOR ADDITIONAL INFORMATION - Write or contact: Mechanical Engineering Departments of the above mentioned universities; Engineers Council for Professional Development, 29 West 39th Street, New York 18, New York; American Society of Mechanical Engineers, 29 West 39th Street, New York 18, New York; Ohio Society of Professional Engineers, 5 East Long Street, Columbus 15, Ohio; Professional Engineers and Surveyors Board, Wyandotte Building, 21 West Broad Street, Columbus 15, Ohio; local Ohio State Employment Service Office. Read: Orientation to Engineering by A. W. Futrell, Jr.; Engineers Unlimited by Harry E. Neal.

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: January 1968

MEDICAL ASSISTANT
079.368

MEDICAL SECRETARY
201.368

NATURE OF THE WORK Together the medical secretary and the medical assistant form an office team on whom both the physician and his patients rely for office maintenance and for pleasant atmosphere. One individual may be equipped to handle both secretarial and laboratory duties and can combine both functions.

The medical secretary and/or medical assistant deal with general office procedures such as greeting patients, recording the patients' histories, answering the telephone, arranging appointments, sending bills, keeping track of payments, and ordering supplies. The amount of typing and transcription varies with the physician's needs.

The medical assistant prepares the patient for examination, assists the doctor in many clinical and diagnostic procedures, sterilizes instruments, and performs a wide range of laboratory tests. Her duties are generally dependent upon the training she has received.

EMPLOYMENT OUTLOOK The opportunities available for both medical assistants and for medical secretaries are very good. Since many of those employed are younger women, there is a high replacement need annually as personnel leave for marriage and family responsibilities. New openings will be created as physicians delegate more non-medical and para-medical office duties to assistants, as the number of registered nurses available for work in physicians' offices decreases, and as clerical procedures including keeping insurance records increase.

REMUNERATION The salary varies from $300 to $350 initially and depends upon the individual doctor, his income, his type of practice, his locality, and the assistant's length of service with and subsequent value to the doctor.

REQUIREMENTS FOR ENTRY

General As with others in the medical field, a medical assistant must have a warm, sympathetic personality and the ability to get along well with people. The medical secretary needs basic secretarial skills in English, shorthand, and typing in addition to an aptitude for detail and enough mathematical background to keep simple accounts. Both positions require persons who are accurate and neat and who have good judgment and discretion in dealing with patients' confidential records.

Training Some girls have found employment immediately after high school graduation provided they have the necessary background. Training, however, is always advantageous. Junior colleges offer two-year courses that provide a general basis for these medical careers, as well as offering specific courses of instruction in medical secretarial and assistant skills. Some four-year colleges offer similar but more extensive programs. Both two and four year schools offer training in medical shorthand, medical terminology, dictation, and in medical laboratory procedures. Some schools arrange part-time work schedules in physicians' offices during the training period. Courses are also available in some business and commercial schools.

WORKING CONDITIONS Generally this work is stimulating, interesting, and is carried out in sanitary, pleasant surroundings. The work is usually light, although some lifting, standing, and walking, are necessary. Working hours for a medical assistant depend a great deal on her location. Work in a private physician's office will generally offer more irregular hours than work in an institutional setting.

AVENUES FOR PROMOTION Opportunities for advancement are rather limited in this field as most assistants and secretaries work in one or two girl offices. In medical clinics, however, one may advance to positions as office managers.

SOURCES OF ADDITIONAL INFORMATION Write or contact: Physicians in your area, local business schools, junior colleges, or the nearest office of the Ohio State Employment Service.

NOTES:

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145 South Front Street
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BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

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# MEDICAL LABORATORY ASSISTANT
078.381

NATURE OF THE WORK The medical laboratory assistant works under the direct supervision of a medical technologist and a pathologist or other qualified physician performing routine laboratory procedures in bacteriology, blood banking, chemistry, hematology, parasitology, serology, and urinalysis. A medical laboratory assistant collects blood specimens, groups and types blood, prepares and stains slides of microorganisms, concentrates specimens for parasitologic study, analyzes blood and body fluids for chemical components, performs microscopic examination of urine, blood, and body fluids, and takes electrocardiograms and basal metabolism tests using such equipment as microscopes and micrometers to make quantitative and qualitative chemical and biological analyses of body specimens. While much of his day is spent working in a laboratory, the medical laboratory assistant may have some direct patient contact in taking electrocardiograms or in drawing blood specimens. The job of the medical laboratory assistant (078.381) should not be confused with that of the medical technologist (078.281), a college graduate, who performs complex and highly technical laboratory procedures.

EMPLOYMENT OUTLOOK There is an urgent need for trained laboratory assistants in almost every area of the state. Estimates indicate a need for approximately 100,000 laboratory assistants by 1975 because of the increase in hospital facilities and in added professional services.

FIELDS OF EMPLOYMENT A medical laboratory assistant works in hospitals, medical clinics, health departments, physicians' offices, private medical laboratories, research centers, and in industrial and pharmaceutical laboratories.

REMUNERATION Pay scales vary according to geographic areas, the size of the facility, and the nature of the duties performed. A beginning salary is approximately $300 to $350 per month with such additional benefits as hospital insurance, paid vacations, and provided uniforms.

## REQUIREMENTS FOR ENTRY

General The applicant should be amiable, be able to work well under pressure, and should demonstrate personal integrity and high moral standards. Good manual dexterity and good vision are generally required since the laboratory assistant often works with delicate precision and optical instruments. Handicapped people can succeed in this field.

Education Applicants must have graduated from an accredited high school, preferably with demonstrated ability in science and mathematics. A complete transcript of courses and grades must be submitted along with a physician's certificate of health and satisfactory personal references. In some cases, aptitude tests and/or personal interviews may be required.

Training A twelve month course of practical and technical training, emphasizing accuracy and precision, is required which includes a minimum of one hundred hours of classroom instruction plus 40 to 44 hours per week of laboratory training with one instructor per two students. Many schools have no tuition fee; some offer scholarships or stipends during the training period. Graduates of the more than 140 schools approved by the Board of Certified Laboratory Assistants are eligible to take the board examination for certification. This occupation can be considered in the less-than-class (individual referral) under the Manpower Development and Training Act for those applicants who can qualify. The following schools and hospitals are authorized to provide training for CLA's in Ohio:

Canton: J.O. Dean, M.D., Aultman Hospital, 625 Clarendon Avenue, S.W.
Canton: Alan Raftery, M.D., Timken Mercy Hospital, 2015 Twelfth Street, N.W.
Cleveland: Thomas Sweeney, M.D., Cuyahoga Community College, 2214 East 14th Street
Lorain: Charles Chesner, M.D., Lorain Community Hospital, 3700 Kolbe Road
Marietta: D.B. Thornburgh, M.D., Marietta Memorial Hospital, School of Certified Laboratory Assistants, Matthew and Ferguson Streets
Middletown: Robert P. Carson, M.D., Middletown Hospital
Troy: Carl G. Hoak, M.D., Dettmer General Hospital
Zanesville: Gustav J. Selbach, M.D., Bethesda Hospital

Certification Only graduates of schools approved under medical auspices are eligible for certification. Certification is obtained by passing the examination sponsored by the Board of Certified Laboratory Assistants. The certified medical laboratory assistant may place the letters CLA after his name as an indication of his qualifications. Many employers hire only certified laboratory assistants.

WORKING CONDITIONS The medical laboratory is generally well-heated, lighted, and ventilated but may occasionally be subject to various unpleasant or noxious odors. The danger of cuts and burns from laboratory equipment may be minimized by careful observance of safety precautions.

SOURCES OF ADDITIONAL INFORMATION Write or Contact: Secretary, Board of Certified Laboratory Assistants, 9500 South California Avenue, Evergreen Park 42, Illinois; and local Employment Service Offices.

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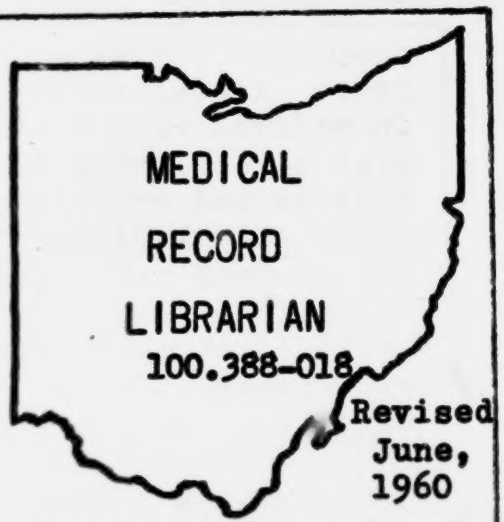

## MEDICAL RECORD LIBRARIAN

100.388-018

Revised
June,
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Is responsible for the coordination of medical data based on detailed records of patients' illnesses and treatments. Collects and catalogs medical and surgical information on each patient, including reports on X-rays, operations, laboratory findings, doctors' orders, and progress notations; checks records for completeness and accuracy; codes diseases according to established standards; indexes diseases, operations and other special study material; prepares daily census information and other regular statistical reports; abstracts and transcribes case histories to permanent records; answers inquiries and prepares reports on individual cases; prepares reports for the use of physicians in their research work; analyzes medical record contents to determine present and potential uses of data; and develops or improves procedures, forms and methods used in keeping records. Medical record librarians in large hospitals often participate in hospital education and research programs.

Medical records are studies by physicians to diagnose illness, and prescribe care; for insurance claims, in legal actions, in training medical and nursing and other related personnel; and by administrators analyzing health services offered by their organizations to determine agency policies and procedures. Also by research to develop and evaluate new treatments and medications, and to plan community health programs.

Chief medical record librarians, in addition to supervising and instructing, represent their departments in hospital staff meetings and may have to vouch for the accuracy of records if they are subpoenaed by the court. As voting members of hospital committees, they may influence major decisions.

A few medical record librarians have unique administrative and research positions and a few are employed as consultants.

This occupation should not be confused with that of a medical librarian whose work is chiefly with books and other publications.

**OPPORTUNITIES**

**Current** - Acute shortage in all sections of the United States in both private and government medical care institutions. Increasing need in specialized fields of research and administrative and training areas.

**Trends** - Demand for additional clinical data in cancer, arthritis and other diseases, need for development of in-patient record systems in mental hospitals and special interest in the aging population are a few of the many reasons why opportunities should remain excellent in this occupation through the 1960's.

**FIELDS OF EMPLOYMENT** - Hospitals, clinics, medical research centers, medical departments of insurance companies, industrial establishments, health agencies, local and State health departments, regional hospital councils, and student health centers.

**AREAS OF EMPLOYMENT** - Major population centers of the State and Nation.

**REMUNERATION** - In 1959, inexperienced medical record librarians who had completed degree or certificate programs were making as high as $4800 a year. Annual entrance salaries for technicians with 1 year of training in medical record library science were from $3200 to $3500 annually. Federal scales range from $4040 to $8330 depending on amount and type of education and experience.

METHOD AND REQUIREMENTS OF ENTRY - Formal training is virtually essential. The minimum requirement for registration is 2 years of college or 3 years of professional nursing education, in addition to either a year of specialized medical record library training or five years of pertinent work experience.

Selection factors - Interest in detail, accuracy, and a willingness to be persistent in obtaining data. Must be discreet in handling confidential information. Must develop tact and possess the ability to adapt. Must be able to maintain standards of accuracy despite pressures. Those aspiring to administrative positions should have organizational and managerial skills, and have the ability to cooperate with other departments and with hospital medical record committees.

Education - Curriculums at the 30 hospital-based schools approved by the Council of Medical Education and Hospitals of the American Medical Association lead to bachelor's degrees or certificates of medical record library science. Schools granting degrees require high school graduation for admission to a full, 4-year college program. Certificate-granting schools offer 12-month concentrated curriculums and usually require 2 or more years of previous college training or graduation from a recognized school of nursing.

Approved programs include 50 weeks of theoretical instruction and practical experience in anatomy, physiology, medical science, medical terminology, management, including hospital organization, interdepartmental relations, purchasing and supervision; psychology; and medical record library science including historical development, legal aspects, ethics, securing and preserving of data, statistics and indexing.Practical training involves hospital admitting and discharging practices; standard indexing and coding practices; and acquaintance with the work of X-ray, pathology, medical library, outpatient and social service departments.

No schools in Ohio offer this training. For a list of all schools in the United States, write to the American Association of Medical Record Librarians, 840 North Lake Shore Drive, Chicago, Illinois.

Registration - Following completion of a degree or certificate program, graduates are eligible to take the registration examination of the American Association of Medical Record Librarians. Requirements for Registration include being a member of the association and either graduation from an approved school or the combination of sufficient education to qualify for admission to an approved school plus pertinent work experience during 5 of the 6 immediately preceding years, and passing a written examination.

WORKING CONDITIONS - Generally pleasant, although increasing complexity of the work and the growing accumulation of records has resulted in crowded conditions in some hospitals.

AVENUES OF PROMOTION - Assignments to supervisory work, primarily in large facilities.

ADDITIONAL INFORMATION - American Association of Medical Record Librarians, 840 North Lake Shore Drive, Chicago 11, Illinois.

NOTES - (Local information, additions, etc.)

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EMPLOYMENT INFORMATION SERIES

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# MEDICAL TECHNOLOGIST
078.281

NATURE OF THE WORK Medical technologists possess a wide variety of laboratory skills which they use in performing tests to assist physicians in the detection, diagnosis and treatment of disease. They are responsible to a pathologist, a physician who specializes in the nature and cause of disease, or may work under the supervision of a medical scientist who is a specialist in a particular branch of clinical science, such as hematology, serology, biochemistry, or bacteriology. In general, medical technologists make complex clinical examinations with a minimum of supervision.

Medical technologists may take blood counts and/or cross match blood, make urinalyses, collect other clinical samples, prepare vaccines and serums, give biological skin tests, measure basal metabolism, and analyze water, food products, or other materials for bacteria. They also calibrate instruments and equipment, standardize solutions, prepare tissue specimens for microscopic examination, cultivate and identify bacteria and observe their reactions to various antibiotics, prepare slides of cells for cancer testing, analyze stomach content and body fluids or other material, and make many other measurements and analyses.

Medical technologists must recognize unusual findings and make accurate reports based on correct observations. Most medical technologists conduct tests or studies in connection with examinations and treatment of patients; some do research on new drugs or on the improvement of laboratory techniques; and some perform administrative duties as technical supervisor of a laboratory. Others teach or supervise technicians and helpers whose training is more limited.

EMPLOYMENT OUTLOOK There is substantial shortage of medical technologists despite a continuing nationwide campaign to recruit young people into the profession. Turnover is rapid since many of the workers are young women who leave for marriage and family responsibilities. Part-time work is available for those with proper training, though those returning to the field after an absence may need a refresher course.

Opportunities should continue to be good because of the increasing service demands of the expanding population, the expansion of health services, and wide use of laboratory procedures by physicians. Many new openings will be developing in this field as a result of hospital expansion.

FIELDS OF EMPLOYMENT Most medical technologists work in hospital laboratories. The remainder work in laboratories of private physicians, public health departments, medical departments of industrial plants, clinics or research institutions or teach in schools of medical technology.

REMUNERATION Salaries in this area have improved greatly over the years. The lowest starting salary for a registered technologist is approximately $5800 a year. Other benefits may be provided including health insurance, meals, laundering of uniforms and paid vacation.

## REQUIREMENTS FOR ENTRY

The most widely recognized medical technologists are those designated as Medical Technologist (American Society of Clinical Pathologists)- - M.T. (ASCP). Use of this title is restricted to those passing the examination for registration and certification given by the Registry of Medical Technologists of the American Society of Clinical Pathologists upon graduation from approved programs.

General Personal qualifications for a medical technologist include a sense of responsibility, an interest in and aptitude for science and mathematics, initiative, patience, and impeccable honesty and integrity.

Good eyesight and manual dexterity are the most important physical requirements and many handicapped people have succeeded in this field.

Training Two types of programs are available to prospective students of medical technology. The first is a four year college course leading to a B.S. degree and certificate in Medical Technology. The alternative is attending college for three years and then transferring to an approved school of medical technology for one year of classroom and clinical training. This program may or may not lead to a B.S. degree depending upon the affiliation of the school. In the fourth year, under either program, the student may receive free tuition or a stipend. Either of the sources listed below can supply a list of schools approved by the Council of Education of the American Medical Association.

WORKING CONDITIONS AND HAZARDS When night or emergency work is required, there are usually provisions for extra pay or matching time off. Hazards are kept to a minimum since medical technologists are taught to exercise extreme care in handling specimens, materials and equipment. Work is often done where infection is prevalent and unpleasant odors, diseased tissue and blood are often present.

AVENUES OF PROMOTION Advancement is possible to supervision, administration or specialization. Positions above these levels are filled by pathologists or medical scientists with advanced degrees. With specialized and additional training, the medical technologist may become a medical scientist and advance to higher levels.

SOURCES OF ADDITIONAL INFORMATION Write or contact Registry of Medical Technologists of the American Society of Clinical Pathologists, P. O. Box 25, Muncie, Indiana; American Society of Medical Technologists, Suite 25, Hermann Professional Building, Houston, Texas.

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# MEDICAL X-RAY TECHNICIAN

Radiologic Technologist
078.368
Radioisotope Technologist
078.381

NATURE OF THE WORK Radiologic technologists operate several kinds of x-ray equipment that make visible on film internal parts of the body which the physician wishes to examine. X-ray machines are used to detect the presence of foreign matter or injury and to discover malformation or malfunction of various parts of the human body.

Radiologic technologists work under the direction of a radiologist, a physician specializing in x-rays and in the use of radiant energy. They place the patient and the x-ray tube so that the anatomical details in questions will be projected on film. They also set up and adjust devices preventing movement of the patient. Technicians determine the proper voltage, current, exposure time, and regulate the controls of the x-ray machine in order to obtain films of high technical quality for interpretation by the physician. Technicians must adjust and manipulate equipment in such a way as to insure minimal radiation exposure for himself and for each patient.

Technicians may assist a physician in fluoroscopy or other special types of x-ray work by preparing a prescribed x-ray "opaque", such as barium salts, which the patient swallows. This "opaque" shades and gives proper delineation to various parts of the anatomy. The actual fluoroscopic process is conducted by the physician.

Radiation therapy technicians assist the physican in treating diseases by exposing affected areas of a patient's body to prescribed doses of radiant energy or other forms of ionizing radiation. The technologist assists in the preparation and treatment of the patient, maintains proper operation of the controlling devices and equipment during treatment, and is responsible for all treatment records.

Radioisotope technologists work in nuclear medicine, a new field which uses radioactive substances, radioisotopes, which are given to patients to diagnose and treat disease. This technologist assists the physician in administering the required dosages and in operating specialized equipment which traces and measures radioactivity.

**EMPLOYMENT OUTLOOK** Opportunities in this field are good because of the expanding role of radiology in the practice of medicine and the increased use of x-rays in public health programs and physical examinations. A shortage exists on a national level especially in small communities; the replacement need offers many opportunities each year.

**REMUNERATION** The beginning salary for registered technicians is approximately $375 to $450 per month. Experienced technicians may receive from $500 to $1000 per month or more.

## REQUIREMENTS FOR ENTRY

**General-Educational** The technician should be a sympathetic and patient person with a cheerful disposition and a keen sense of responsibility. He should be willing to work with disabled persons and be accurate and thorough.

Continuous standing and lifting of equipment and non-ambulatory patients calls for persons of good health and stamina who can work efficiently and accurately, often under conditions of stress. Persons with anemia are usually advised to avoid this work.

High school graduation is required. Many American Medical Association-approved schools require two years of college credit or that the student be a registered nurse. Mathematics and science courses, especially physics, chemistry, and biology, are helpful. Typing and some mechanical skill may be useful.

**Training** The most widely known and accepted training courses, generally two years in length, are offered by medical and hospital schools approved by the Council of Medical Education and hospitals of the American Medical Association. The curriculum includes courses in physics, anatomy, physiology, x-ray therapy, and equipment maintenance. Cost of training in hospital schools is relatively low and many of the approved schools provide stipends during at least part of the training program. An alternative to the technical training outlined above is a four year college course which offers a Bachelor of Science degree in radiologic technology. People planning a career in x-ray technology are advised to enroll in a school that is formally approved by the American Medical Association. The organizations listed under "Sources of Additional Information" will provide a complete list of approved schools.

Nuclear medicine or radiation programs require an additional year of training and lead to certification in these specialities.

**License-Examinations** After completing training, the technician should register with the American Registry of Radiologic Technologists. By passing an examination, he can become a registered technologist. Only graduates of AMA-approved schools are eligible for registration. Some employers hire only registered radiologic technologists.

WORKING CONDITIONS Technicians generally work a 40 to 44 hour week with possible "on call" duties. Work is generally in a clean, well-lighted, and ventilated area. Care is taken to protect technicians from radiation exposure through the use of special protective devices.

AVENUES OF PROMOTION Qualified x-ray technicians may advance to chief technician in a large hospital. With experience and further study, the radiologic technician may become registered in Nuclear Medicine Technology or in Radiation Technology and may qualify for jobs in these expanding fields.

SOURCES OF ADDITIONAL INFORMATION Local hospitals and clinics; The American Society of Radiologic Technologists, 537 South Main Street, Fond du Lac, Wisconsin, 54935.

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# EMPLOYMENT INFORMATION SERIES

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## METALLURGIST
## Extractive
011.081-018
## Physical
011.081-022

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Nov.
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Concerned with the processing of metals and their conversion into commercial products. Usually works in one of two main branches of metallurgy--extractive, or physical. Extractive metallurgy deals with the extraction of metals from their ores, and with refining and related processes. Physical metallurgy deals with the content and structure of metals and their alloys, and with methods of converting refined metals into final products having a specified strength and hardness or other desired properties.(This last includes metal fabricating industries forming metal into useful shapes.)

The terms metallurgist and metallurgical engineer are often used interchangeably. A metallurgical engineer may be engaged in research and development, analysis and testing, directing the processing of ores, metal production in all forms such as steel rolling, heat treating, forming, etc. sales and service of metal products, teaching, writing and editing for technical magazines and trade associations, or consulting services.

**OPPORTUNITIES**

**Current** - This is one of the smaller branches of the engineering profession. The number of metallurgical engineers graduating annually is small, and demand has been and is strong, considerably exceeding the supply of metallurgical engineers. They are listed as a demand occupation by the U. S. Dept. of Labor.

**Trends** - Employment is expected to grow rapidly in the 1960's and beyond. Metal working industries will continue to expand and increasing numbers of metallurgical engineers will be needed to work on problems involved in the adaption of metal alloys to specific needs. Supersonic aircraft, jet engines, guided missiles, and interplanetary space travel will continue to create new metallurgical problems. The atomic energy program has opened the door to a whole new field in the study of metals and their uses. Problems created by the depletion of high grade ores and the utilization of low-grade ores will increase the need for metallurgical engineers.

**FIELDS OF EMPLOYMENT** - Metal working industries (steel and nonferrous); metal mining industry; metal-using industries such as automobile and appliance manufacturers; smaller numbers in other industries, government agencies, consulting firms, research organizations, and educational institutions.

**AREAS OF EMPLOYMENT** - In the large metal-fabricating centers of the country--

Ohio, Illinois, Pennsylvania, Michigan, New York, and California. Also, metal mining regions.

REMUNERATION - In 1958, the median yearly salary for new engineering graduates, bachelor's degree, no experience, was $5900. An additional $600 to $1200 more was the rule for engineers with master's degrees, and graduates with Ph.D. degrees received salaries ranging from $7500 to more than $10,000 a year. 10 years of experience--$9250. 20 years of experience--$11,200. Half of the total number of metallurgists were earning in excess of $11,200 and 10% in excess of $16,000.

ENTRY METHODS AND REQUIREMENTS - Four or five years of college work leading to a bachelor's degree in engineering is usually the minimum educational requirement for engineering work. Graduate training is being emphasized in the selection of personnel for an ever-increasing number of jobs.

It is important to select an accredited school of engineering. In Ohio--these include Case Institute of Technology, Cleveland; Ohio State University, Columbus; University of Cincinnati, Cincinnati.Undergraduate courses in metallurgy are also available at Youngstown University, Youngstown,Ohio.

In the typical engineering curriculum, the first two years are devoted to basic preengineering subjects such as mathematics, chemistry, and physics, and to courses in the liberal arts--humanities, social sciences, and English. The last 2 or 3 years are devoted mostly to engineering and advanced mathematics and science subjects with metallurgical engineering being studied specifically. Some liberal arts colleges have arrangements with certain engineering schools whereby the student spends 3 years in the liberal arts college and 2 years in the engineering school, and receives degrees from both. About 35 institutions have cooperative plans,alternating college attendance with work periods.This may expand the normal 4-year curriculum to 5 or 6 years, but about 2 years of experience are gained.

High school students should prepare for engineering college by taking at least three and preferably four years of mathematics, one year each of chemistry and physics, and our years of English. (Two of Ohio's three engineering schools underlined the English requirement since the engineering student must know how to read fast and efficiently.)

A State license is required if the work affects life, health, or property. Registration as a professional engineer is dependent on graduation from an accredited engineering college, plus 4 years of experience and passing of a State examination. Graduation requirement is sometimes waived for a longer period of experience.

AVENUES OF PROMOTION - From routine work usually moves up to positions of greater responsibility. Ability and interest may advance engineer to high-level technical, supervisory, and administrative jobs, and even to top executive positions.

ADDITIONAL INFORMATION - American Institute of Mining,Metallurgical and Petroleum Engineers, 29 West 39th St., New York 18, N. Y.; American Society for Metals, 7301 Euclid Avenue, Cleveland 3, Ohio.

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## METEOROLOGIST
025.088-014

Rev.
Feb.
1961

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Primarily engaged in weather forecasting. May be concerned with many types of problems, ranging from the study of the physical and chemical processes occurring in the outer atmosphere to the affect of day-to-day changes in temperature on sales by retail stores.

A weather forecaster, technically known as a synoptic meteorologist, interprets current weather data—air pressure, temperature, humidity, wind direction, as reported by observers in local as well as worldwide networks and makes short and long-range forecasts for given localities and regions.

In smaller branches of the profession, climatologists analyze records of rainfall, sunlight, temperature, wind and other weather data, and utilize this information for many purposes such as improvement of forecasting, and the planning of military and business operations. Dynamic meteorologists study the physical laws of air movement. Physical meteorologist study the atmosphere's chemical composition and electrical properties; solar radiation; the transmission through the atmosphere of light, sound, and radio waves; and all the factors affecting clouds and rainfall. The specialist in applied meteorology (sometimes called industrial meteorology) is concerned with the relationship between weather and specific human activities, biological processes, and industrial operations. May make special forecasts for individual companies, conduct climatological studies for large commercial farming enterprises, attempt to induce rain or snow in a given area through cloud seeding, and work on such problems as smoke control or air pollution.

Growing numbers of meteorologists are engaged in research, from practical industrial problems to basic theory. Especially important today are experiments carried out with earth satellites and the interpretation of information obtained.

When teaching in universities or colleges, may also do research or act as consultant.

## OPPORTUNITIES

**Current** - Listed as a "demand occupation" by the U.S. Department of Labor. There is a desperate need for qualified persons with advanced degrees to carry out basic research. Opportunities are fairly limited for the man possessing a B.S. degree only, while those with advanced degrees engaged in basic research have practically unlimited opportunities.

**Trends** - Continued growth is expected in the 1960's and over the long run. Since this is a small profession, the openings in any one year are not expected to be large, but the number of graduates in meteorology has traditionally been small. Only 79 were graduated from United States colleges and universities

# METEOROLOGIST

in 1957.

The Weather Bureau, largest civilian employer of meteorologists, expects to need between 75 and 100 yearly during the 1960's.

Opportunities are expected to increase somewhat in weather consulting services and on the staffs of private companies.

Airline employment is expected to be limited, with some replacement needs and the need for a few exceptionally well qualified meteorologist with advanced scientific knowledge for research work related to jet aircraft operation.

College and university employment is expected to increase, and the Armed Forces will have some openings for civilian meteorologists.

For Women - Relatively few are employed, and most of these in college and university research.

FIELDS OF EMPLOYMENT - In 1958, U.S. Armed Forces (active duty - 2600, civilian-275); United States Weather Bureau - 2300; remainder: commercial airlines, college and universities, private weather services, manufacturers of meteorological instruments, aircraft companies, etc.

AREAS OF EMPLOYMENT - World-wide, nation-wide.

REMUNERATION - See current Civil Service announcements for Federal Government pay rates. In 1958, airlines were paying a starting salary of $415 a month and a top salary of $715--reached after 9 years of automatic pay increases. Teaching salaries are dependent on individual colleges and universities concerned.

ENTRY METHODS AND REQUIREMENTS - Bachelor of Science degree with a major in meteorology or a related science field. Training should include physics and mathematics as well as meteorology. New graduates with only a bachelor's degree qualify manily for employment in weather forecasting. Advanced training, including graduate work and possibly courses in chemistry, is desirable for some specialized branches of the profession, and or teaching and research.

Relatively few colleges and universities offer degrees in this subject. Many institutions offer some meteorology courses which, if combined with sufficient training in mathematics and physica, qualify graduates for most entry positions. The Armed Forces also provide meteorological training to a selected number of commissioned officers who are college graduates.

The Weather Bureau offers an in-service training program in the form of scholarships for more advanced and specialized training for their meteorologists, and for elgible students, summer-time work until they receive degrees and can go to work full-time for the Bureau.

Among the personal characteristics needed for this profession--mathematical aptitude and interest in physical science. For some jobs, the ability to draw quickly and neatly is important.

Civil Service examinations are required for all governments positions.

WORKING CONDITIONS - Inside, usually, May work outside occasionally. Stands much of the time. May work nights, holidays, rotating shifts, and in isolated areas.

AVENUES OF PROMOTION - According to Civil Service regulations in the Weather Bureau. Limited in airlines. Some well-trained meteorologists, with a background in science, engineering, and business administration, may find their best opportunities through the establishment of their own weather consulting service.

ADDITIONAL INFORMATION - American Meteorological Society, 3 Joy St., Boston 8, Mass.; U.S. Weather Bureau, Washington 25, D.C.

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## MINING ENGINEER

010.081-018

Revised
August
1963

## OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - Mining engineers are responsible for the location and extraction of coal, petroleum, metallic ores and non-metallic materials; planning the construction of shafts and tunnels, devising the means for mining the minerals, the methods to be used in transporting them to the surface, in separating them from worthless earth, rock or other mineral, and the preparation facilities used in preparing the product. They will also be concerned with the design, construction, and installation of water supply, ventilation equipment, and electric light and power facilities. Other major functions are: prospecting, geological and topographical surveys to determine location, size, slope, character, and types of deposits and development, opening the mine and extending its operations. Major specialities in this field are: coal, natural gas, petroleum, metal and mineral mining.

**OPPORTUNITIES**

**Current** - This vocation is one of the smaller branches of the engineering field. Opportunities for entrance in any one year are relatively few.

**Trends** - The growing population of the United States, expansion in industry, and development of new alloys will increase the need for minerals and mineral products. Over a period of time engineers will be needed to plan and develop new ways of mining poorer deposits and/or devise a means of operating a mine and treatment plant on a competitive basis.

**For Women** - Approximately 2% of all women engineers are employed in the fields of mining or metallurgy. Although the majority of engineers in this field are men, a number of very good opportunities exist for women in the area of scientific research.

**FIELDS OF EMPLOYMENT** - A large percentage of all Mining Engineers are employed in the mining and petroleum industries. Others teach, do research and graduate study in colleges and universities, work for government agencies, or act as independent consultants.

**AREAS OF EMPLOYMENT** - They are usually employed at the location of the mineral deposit. May be located in large or small communities, in the tropics, arctic, or semi-arctic regions.

**REMUNERATION** - The starting salary for mining engineers with a bachelor of science degree and no experience ranges from $525 to $585 per month. A masters or doctorate degree commands a higher salary. The starting salary for engineers employed by the Federal Government ranges from $5,355 to $6,345 a year depending upon the individual's college record and the amount of graduate study completed up to one full year.

REQUIREMENTS FOR ENTRY

General - Should possess above average intelligence, the ability to analyze problems with accuracy and thoroughness, capable of effective oral and written expression, be creative, adaptable, and enjoy working with other people.

Education - The minimum educational requirement is a Bachelor of Science degree in Mining Engineering from an accredited college or university. Ohio State University is the only school in Ohio that offers a program of study in this field. Basic training is received in such areas as mathematics, physics, chemistry, English, and subjects of broad cultural value. Specific instruction is received in mineralogy, principles of rock mechanics, explosives and rock work, mining evaluation and analysis, mining gases and ventilation, and principles and methods of other engineering fields. An opportunity is also provided for the superior student to pursue an honor program and qualify for the Masters degree as well as the Bachelors degree in the same length of time. Those students interested in following a research-oriented, engineering-science career are encouraged to obtain a Ph.D. degree.

LICENSE, EXAMINATION - All states require registration for the legal right to practice professional engineering where life, health, or property may be affected by the engineer's work. Requirements for registration as a professional engineer may be obtained from the Professional Engineers and Surveyors Registration Board. The registration fee is $15.00.

AVENUES OF PROMOTION - Many companies provide a formal training program for new engineering employees. This program affords the engineer an opportunity to learn industrial and company practices and receive well-rounded and practical professional experience. Advancement in this field is a matter of individual growth and enterprise. Opportunities for promotion in managerial and administrative positions, research, teaching, and consulting firms, are based on education, training, experience and ability.

SOURCES FOR ADDITIONAL INFORMATION - Write or contact: Ohio State University, Department of Mining Engineering, Columbus, Ohio; American Institute of Mining, Metallurgical and Petroleum Engineers, Inc., 47th Street and First Avenue, New York 17, New York; Engineers Council for Professional Development, 29 West 39th Street, New York 18, New York. Read: "Opportunities Unlimited" by the Society of Mining Engineers, "Careers in Petroleum Engineering" by the Society of Petroleum Engineers of AIME, "Mining Engineering" by the Michigan College of Mining and Technology. A list of accredited schools may be obtained by contacting the Society of Mining Engineers of the American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc.

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

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# LICENSED PRACTICAL NURSE
079.378

**NATURE OF THE WORK** A licensed practical nurse, working under the supervision of a physician or registered nurse, performs various nursing duties in the care of the sick, in rehabilitation of patients, and in prevention of illness for all kinds of patients. She takes the patient's temperature, pulse, blood pressure, and records this information on medical charts. She may give injections, change dressings, exercise convalescents, and bathe, massage, or feed patients. She may also prepare surgical equipment, perform routine laboratory tests, administer first-aid, and assist physicians or professional nurses with more complicated diagnostic procedures or treatments.

**EMPLOYMENT OUTLOOK** The number of employees in the field of medical services has decidedly increased in the past decade. The need for practical nurses is such that a qualified person can find work in almost any type of nursing situation, especially in the fields of geriatrics and rehabilitation of the handicapped. Opportunities exist for men, particularly in hospitals and institutions. Factors influencing the growth of this field are the population growth; the public's interest in good health, and the increase in the number of people who have hospital, medical, and surgical insurance or Medicare.

**FIELDS OF EMPLOYMENT** The licensed practical nurse can obtain employment in the majority of hospitals, public health agencies, doctor's offices, industrial establishments, sanitoriums, nursing homes, social service organizations, in private duty, and in federal service.

**REMUNERATION** Wages for licensed practical nurses range from $300 per month with no experience to $400 per month or more for experienced personnel. Salaries will vary with the size of the community, field of employment, and type of duty. Extra benefits may include paid vacations, sick leave, hospitalization, insurance, and retirement plans.

## REQUIREMENTS FOR ENTRY

**General** The prospective LPN should be emotionally stable, mature, possess good judgment, high moral standards, a genuine interest in helping the sick and be reliable, adaptable and tolerant. Most schools of practical nursing require that applicants be high school graduates but exceptions may be made if the enrollee is over 25 years of age.

**Education** The length of training is usually one year. Some programs, however, are part-time, evening courses of study and may be 18 months in length. In all programs, the student will have clinical, practical experience in a hospital or in a related institution. Classroom instruction includes courses in nursing education, in anatomy, physiology, personal hygiene, community health, nutrition, family living, vocational relationships, and instruction in the care of medical, surgical, geriatric, and obstetric patients. Some schools are tuition-free; others may charge from $50 to $200 for such a course of study. There are extra charges for books, equipment, and uniforms. During the period of clinical experience, the student may receive a small allowance. There are 31 approved Schools of Practical Nursing in Ohio, for which the State Board of Nursing Education and Nurse Registration is the legal approving agency, operated by hospitals, health agencies, community organizations, junior colleges, private schools, or as a part of vocational or adult education programs. Refer to Part II, Training Directory, Ohio Employment Information Series, for the names and addresses of approved schools or contact the State Board of Nursing Education and Nurse Registration, 21 West Broad Street, Columbus, Ohio, 43215, for an up-to-date listing. Local training courses for licensed practical nurses are often available under the Manpower Development and Training Act. Contact local Ohio State Employment Service offices for information regarding MDTA training.

LICENSE - EXAMINATION Licenses are granted to practical nurses who are (1) graduates of an approved school of practical nursing, (2) graduates prior to July 1, 1956, or a non-approved school of practical nursing, (3) licensed by examination in another state, territory, or foreign country and who meet the requirements in Ohio at the time of licensure. The annual license renewal fee is $2.00. Rules and regulations regarding the licensing of practical nurses may be obtained from the State Board of Nursing Education and Nurse Registration (see address above) or from the licensing brief, Part III, Ohio Employment Information Series, "Licensed Practical Nurse".

WORKING CONDITIONS A licensed practical nurse usually works a 40 hour, 5 day week. This work will generally require some lifting, standing for long periods, and doing considerable walking, reading, and patient handling.

SOURCES OF ADDITIONAL INFORMATION Write or contact: State Board of Nursing Education and Nurse Registration, 21 West Broad Street, Columbus, Ohio, 43215; National League of Nursing, Committee on Careers, 10 Columbus Circle, New York, New York, 10019; the local Ohio State Employment Office; or the nearest approved school of practical nursing.

NOTES

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BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

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# NURSE, REGISTERED PROFESSIONAL
075.378

NATURE OF THE WORK A registered nurse gives direct nursing care to patients and/or supervises allied nursing personnel. She has responsibility for carrying out medically prescribed care and performing independent nursing functions. Some of the capacities in which registered nurses may serve:

Hospital Nurses (67%) have overall responsibility for a patient's nursing within the framework of the physician's medical care and act as team leaders for other workers such as the licensed practical nurse and hospital attendant. Some hospital nurses perform skilled bedside services for sick patients. Some work in such areas as the operating room, delivery room, nursery, intensive care unit, emergency room or in caring for the mentally and the chronically ill.

Private Nurses (11.4%) are directly employed by patients or their families.

Office Nurses (8.1%) are employed by private practitioners or in medical clinics and perform some laboratory work, assist with examinations and treatment of patients.

Public Health Nurses (6.4%) are employed by public and private health agencies, including city and county health departments and visiting nurse associations. School nurses account for 1.7% of this figure.

Occupational Health Nurses (3.2%) give nursing care principally to company employees in business and industry.

Nurse Educators (3.5%) teach students in the various types of nursing schools.

EMPLOYMENT OUTLOOK Presently too few students enter the nursing field to satisfy growth and replacement needs. According to a 1964 report from the Surgeon General's Office, the nation will need 680,000 nurses in 1970. An increasing number of men have been entering the profession and are finding satisfaction in this field.

REMUNERATION A survey of hospital staff nurses' salaries in 1967 in Ohio revealed that starting salaries range from $350 to $600 per month. Public health nurses' starting salaries also fell within this range.

## REQUIREMENTS FOR ENTRY

General High school graduation is required for admission to all schools of nursing. Some schools accept only graduates in the upper third or upper half of their class. Some require specific high school subject background. Interest in people, desire to care for the sick, dependability, good mental and physical health, satisfactory relationships with people, and an aptitude for the biological and behavioral sciences are the necessary personal qualifications.

Education Diploma, baccalaureate, and associate degree programs of nursing education are offered. Diploma programs, two to three years in length, are conducted by hospital schools. College and university programs, four years in length, consist of both academic and practical study courses; baccalaureate degrees are conferred upon completion of such training. Associate degree programs conducted in junior and community colleges, two years in length, also include both academic and practical training. Anatomy, physiology, microbiology, nutrition, and psychology are included in each curriculum above as well as instruction in nursing education.

Tuition and other expenses are from $150 to $200 per year in hospital schools. Colleges and universities charge the regular, undergraduate fees, while tuition at junior and community colleges is usually less than that in a four year institution. Scholarships and loans are available from hospital schools, colleges and universities, various civic and professional organizations, women's clubs, and business groups. For a complete list of state-approved schools of nursing in Ohio, contact the State Board of Nursing Education and Nurse Registration, 21 West Broad Street, Columbus, Ohio, 43215, or refer to the Training Directory, Part II, Ohio Employment Information Series, which lists all approved schools and the type degree granted by each.

Licenses-Examinations To become licensed in the State of Ohio, a nurse must have graduated from a school of nursing approved by the State Board of Nursing Education and Nurse Registration and must have passed the State Board examination. A nurse may be registered in more than one state either by examination or by license endorsement.

AVENUES OF PROMOTION Nurses are generally promoted from Staff Nurse to Head Nurse, then to Supervisor, Assistant Director of Nursing, and finally Director of Nursing. To assume a teaching or administrative position, one must have successfully completed some graduate training. Promotions are generally based on work experience, supervisory ability, and advanced education and training.

**SOURCES OF ADDITIONAL INFORMATION** Write or Contact: Ohio State Board of Nursing Education and Nurse Registration, 21 West Broad Street, Columbus, Ohio, 43215; Ohio State Nurses Association, 400 East Main Street, Columbus, Ohio, 43213; Ohio League for Nursing, 33 South James Road, Suite B-11, Columbus, Ohio, 43213.

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EMPLOYMENT INFORMATION SERIES

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# OCCUPATIONAL THERAPIST
079.128

**NATURE OF THE WORK** The occupational therapist plans and carries out educational, pre-vocational, and recreational programs to assist in the physical, psychological, social, and economic rehabilitation of injured and disabled persons. Upon a physician's diagnosis and recommendations, the occupational therapist selects and directs activities which will best meet that patient's needs including such traditional, manual and creative arts as weaving, clay modeling, leather work, and woodwork. Recreational activities also include parties and sports. New emphases are being placed on the teaching and retraining of rehabilitation patients in work-related skills, especially in the business and industrial trade areas. Training activities often include teaching the disabled patient how to care for his own personal grooming needs and how to perform such common motions as opening doors, turning on lights, and using telephones. The disabled housewife may be trained to care for her children and to perform normal household tasks. The occupational therapist, in all these tasks, not only directs training and retraining activities, but plans the best method and devices for facilitating a patient's own rehabilitation.

Occupational therapists' responsibilities may include: supervision of occupational therapy assistants who teach a particular skill, volunteer workers, and student therapists; administrative duties as directors and assistant of an occupational therapy program; working with those who have one specific type of disability; research projects; and instructing nursing and recreation personnel in the purposes and objectives of the occupational therapy program.

**EMPLOYMENT OUTLOOK** Employment opportunities for occupational therapists are expected to be excellent through the next decade. The demand is expected to remain greater than the supply as public interest in the rehabilitation of disabled persons and the success of established occupational therapy programs increase. In addition to the replacement need, there will be numerous opportunities for work with psychiatric patients, children, and older persons as well as with others suffering from crippling injuries and diseases.

**FIELDS OF EMPLOYMENT** Most occupational therapists work in hospitals and other health institutions, such as school clinics and homes for the aged. The remainder work in special workshops or in community mental health centers, religious and community organizations, or in government agencies. A few occupational therapists are employed in home-visiting programs and some are members of the Armed Forces.

REMUNERATION Salaries of occupational therapists are comparable to those in similar professions. Experience, size of hospital, level of responsibility, and degree of specialization influence salary levels. A beginning occupational therapist receives about $5500 to $6000 per year. Therapists with some experience average close to $8000 per year, with those in administrative positions earning considerably more.

## REQUIREMENTS FOR ENTRY

General Because occupational therapists work with people who are sick, injured, and disabled, they must be emotionally stable, healthy, poised, creative, patient, and must have an interest in medical science and in manual skills. The most outstanding characteristic is the desire to help others.

Training Two basic types of professional education for occupational therapists exist: (1) a degree program combining three and one half years of academic work, with a major in occupational therapy, with a nineten month clinical period of supervised practical work in hospitals and health agencies leading to a Bachelor of Science degree and (2) a certificate program which offers professional education to those with a baccalaureate degree in another field. Presently, The Ohio State University College of Allied Medical Services is the only school in Ohio offering approved training for occupational therapists.

License Although there are no state licensing requirements at this writing, many positions require that one register with the American Occupational Therapy Association. Graduation from an approved school of occupational therapy is required for entrance into the national registration examination conducted by the American Occupational Therapy Association. Persons successfully completing the examination may apply for listing in the Registry of Occupational Therapy.

WORKING CONDITIONS Occupational therapists generally work a 40 hour week in the laboratory and/or in patients' rooms. Working conditions are usually good; fellow workers include doctors, physical therapists, nurses, social workers, and teachers. There is much standing and talking, particularly in instructing patients.

AVENUES OF PROMOTION A newly graduated occupational therapist usually starts as a staff therapist from which promotion may follow to senior therapist, director, coordinator, or consultant.

**SOURCES OF ADDITIONAL INFORMATION** Write or contact: Department of Occupational Therapy, College of Allied Medical Servic The Ohio State University, 410 West 10th Street, Columbus, Ohio, 43210; American Occupational Therapy Association, 251 Park Avenue South, New York, New York, 10010.

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BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

Revised: January 1968

# OFFICE MACHINE OPERATORS

Duplicating Machine Operators 207.782, 207.884, 207.885
Transcribing Machine Operator 208.588
Embossing Machine Operator 208.782
Billing Machine Operator 214.488
Bookkeeping Machine Operator 215.388
Adding and Calculating Machine Operators 216.488
Mail Preparing and Mail Handling Machine Operators 234.582
234.885

**NATURE OF THE WORK** This brief presents descriptions of the work of operators of some of the more common types of office machines ranging from simple mechanical devices that open letters to electronic equipment capable of performing highly involved computations. On billing, adding, and calculating machines, the operator presses numbered or lettered keys. Duplicating and mailing machines run automatically for long periods once set by the operator. Office machine operators most often deal in repetitive work. Varied assignments, however, may occur for calculating machine operators in computing percentages or averages.

Billing machine operators use machines that both type and add while preparing customer purchase statements which include the customer's name and address, the items purchased, and the amounts of money involved in each transaction. A billing machine also calculates and prints totals, shows discounts and many other items.

Adding and calculating machine operators, using electrically and manually operated machines, prepare payrolls, invoices, and other statistical materials. Adding machine operators (D.O.T. - 216.488) use their machines to add, to subtract, and sometimes to multiply. The calculator is a more complex piece of equipment than the adding machine and has a much larger keyboard. Calculating machine operators (D.O.T. - 216.488) use the calculator, not only to add, subtract, multiply, and divide, but to get square roots and to figure percentage distributions. Some office workers who are experts in operating adding and calculating machines use this equipment part-time and perform other office duties. However, operators of the most complex calculating machines--key driven (Comptometer-type) calculators which require considerable skill and knowledge on the part of the operator--usually spend full time in this work.

An addressing machine operator (D.O.T. - 234.582) operates machines to print addresses and code numbers. He puts plates into the loading rack and starts the machine which automatically feeds plates, stencils, or tapes through the mechanism. He adjusts the flow of ink and guides to fit size of the paper used. He maintains the plate file and operates an embossing machine or typewriter to make corrections, additions, and changes on plates.

Mail preparing and mail handling machine operators run automatic equipment which handles incoming and outgoing mail. Only in offices which have large mail volume does this work require the full time of an operator. Mail opening, stamping, and sealing are all done by such personnel.

Operators of duplicating and copying machines run equipment which produces copies of typewritten, printed, and handwritten documents more quickly and/or inexpensively than is possible by typing. Some equipment, copying machines particularly, can be operated by almost any office employee who has taken a few minutes training. More complicated duplicating machines, capable of producing thousands of copies of documents in a single run, are usually operated by trained duplicating machine operators. Operators who run these machines insert a master copy of the material to be reproduced (a stencil in some cases; in others, raised type), adjust the mechanism, and may keep the duplicator operable.

A bookkeeping machine operator records complete sets of records of financial transactions. He sorts the documents to be posted, such as checks and debit and credit items, varifies entries, and summarizes and balances totals to insure accuracy.

Using transcribing machine and typewriter, the transcribing machine operator, by means of earphones, transcribes recorded data and types messages and letters. He may keep record files.

EMPLOYMENT OUTLOOK Many job openings are expected as businesses grow bigger and more complex and as the volume of operations that can be done by machines continues to mount. An increasing amount of clerical work will be taken over by large computers and other machines in electronic data processing systems, the net effect being a slower growth in employment of office machine operators over the next few years. The character of many jobs will change as new machines are introduced, as various office occupations become more selective, and as advanced training becomes necessary.

FIELDS OF EMPLOYMENT Nearly every industry doing a large volume of record keeping and other paper work employs many types of office machine operators.

REMUNERATION Salaries vary according to the machine operated, ranging from $282 per month for addressograph operators to $440 per month for bookkeeping and billing machine operators. Salary also varies with the type and size of the company. Average salaries of office machine operators fall between $331 and $423 per month.

REQUIREMENTS FOR ENTRY Graduation from high school and/or business school is required for many office machine operator positions. Courses in office machine operation and business mathematics are valuable. Combined work-study programs (distributive education) are offered in many local high schools. On-the-job training a one week to several month course, is offered in many offices depending upon the types of machines operated. Manaual dexterity, good vision, and the ability to detect and correct errors are all helpful attributes.

AVENUES OF PROMOTION Most employers follow a promotion-from-within policy. Promotion may be from a beginning routine machine job to a more complex one or to a related clerical job. Often, employers provide the additional training required in such positions. Advancement for office machine operators employed in firms with large clerical staffs may be to supervisory positions as section or department heads.

SOURCES OF ADDITIONAL INFORMATION Write: United Business Education Association, 1201 16th Street, N.W., Washington, D.C., 20609; National Association and Council of Business Schools, 2400 16th Street, N.W., Washington, D.C., 20609; and Ohio State Employment Service local offices.

# EMPLOYMENT INFORMATION SERIES

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## OFFICE MACHINE SERVICEMAN

633.281-030 Revised March 1960

## OCCUPATIONAL RELEASE

STATISTICAL MACHINE SERVICEMAN 633.281
TABULATING EQUIPMENT MECHANIC 633.281

NATURE OF THE OCCUPATION - The office machine serviceman repairs and maintains typewriters, adding machines, calculators, cash registers, accounting and statistical machines; from relatively simple typewriters and adding machines to tremendously complex electronic data-processing machines. Tests and inspects machines, diagnoses trouble and makes special repairs. Uses common handtools--screwdrivers and pliers, and special tools designed for the particular machine. Repairs or replaces broken or worn parts, adjusts various mechanisms, cleans and oils machines. Most adjustments are made in offices where machines are located. For overhaul and more extensive work, the smaller machines are taken back to the repair shops. May instruct personnel in machine use and sell supplies for machine serviced.

Statistical Machine Serviceman and Tabulating Equipment Mechanic - Installs and services all types of Accounting, Statistical and Calculating Machines in customers' offices. Diagnoses mechanical, electrical or electronic troubles by operating machines, observing sequence of operations, examining printed results, punched cards or tapes, checking circuits and consulting wiring diagrams, timing and sequence charts, and by use of gauges, volt-ohm meter, oscilloscope and dynamic timer. Repairs and adjusts equipment by repairing or replacing worn or broken parts, by timing and adjusting gears, cams, clutches or electrical contacts. Executes a planned preventive maintenance program by cleaning, lubricating and checking for marginal adjustments and worn parts. Changes machine specifications by installing special devices and making electrical and mechanical changes to meet customers' requirements. Makes electrical and mechanical alterations in accordance with engineering design improvements. May instruct and advise customer personnel in machine operation, procedures, and control panel wiring problems. May supervise and instruct student Customer Engineers.

OPPORTUNITIES

Current - Business machine repairmen are generally hired as trainees and acquire skills through company schools and on-the-job training. Few servicemen leave their jobs except for promotions, retirement, or self-employment. Opportunities are good for a limited number of men to be trained. In 1958, occupations were divided as follows; typewriter 17,000; adding machine - 2000; calculating machine - 4000; cash register - 4000; accounting-bookkeeping - 3000; electro-mechanical and electronic accounting-statistical - 10,000 (3000 electronic); dictating or transcribing - 2000.

Trends - Past years have indicated this occupation's ability to remain unaffected by economic ups and downs. Increased sales during times of prosperity enlarge the demand for installation and new service. Decreased sales during times of recession mean greater wear and tear on existing equipment and thus create a demand for more service. The outlook for 1960's - fairly rapid growth of employment, somewhat faster than the labor force as a whole. The need for increasing use of office machines in business and industry and the greater maintenance requirements of the newer, more complicated equipment will create a need for additional employees. The greatest growth is anticipated for servicing electronic accounting-statistical and data-processing machines. Since business machine servicing is not a large field of work, only a few thousand young men will be able to enter the occupation yearly. Factors of transfer, death and retirement provide only 500-600 openings annually.

**FIELDS OF EMPLOYMENT** - Currently, business machine manufacturers employ one-third of the business machine servicemen, independent sales-service shops one half; the organizations including the government maintaining their own staff of repair workers account for the remainder.

**AREAS OF EMPLOYMENT** - Both large and small cities offer many opportunities.

**REMUNERATION** - Dependent on where man is employed, type of machine serviced and length of service. Trainee wages average between $63 to $80 per week. Overall averages for all types of experienced servicemen--$80 to $130 a week. Typewriter and adding machine repairmen - $80 - $95 a week. Cash register, calculator, bookkeeping-accounting-statistical machines $90 - $125 a week. Highest rates go to electronic data-processing machine servicemen with various companies reporting salary ceilings from $140 - $185 a week. (Additional earnings are available to some business machine servicemen on a basis of sales of supplies or service contracts.)

**ENTRY REQUIREMENTS**

**General** - High school education, general mechanical aptitude, analytical and reasoning ability, neatness, courtesy, personal contact ability and willingness to work where assigned geographically, if working for business machine manufacturer.

**Training** - Manufacturers prefer to hire young men without previous experience and train them to service their line of machines. On Statistical-Tabulating machines the most qualified candidates are those who have received technical training beyond the high school level in the fields of electricity (including electronics) and mechanics.Armed Forces or civilian technical training in electronics may very likely be valuable.

**Adding machine or typewriter** repair takes one to 2 years of school and on-the-job training; calculating machine, 2 - 4 years; cash register, 2½ to 3½ years; accounting-bookkeeping, 4 - 5 years in which the first two years may be work and training on adding machines, calculating machines or cash register repair.

**Accounting-Statistical**--two months on the job, 3 - 10 months of training school, 12 - 18 months under supervision on the job. Independent repair shops, because of the variety of machines they service, generally require more training time per applicant.

**WORKING CONDITIONS** - This is cleaner and lighter work than most other mechanical trades and comparatively free from danger of accidents.Office worker attire is worn since work is clean and often performed in offices where machines are used. Considerable travel is required within the area served by the employer.

**AVENUES OF PROMOTION** - Supervisory and managerial posts. Laboratory technician and engineering assignments, manufacturing, sales engineering work and positions as technical advisers to users of the equipment. Also, may set up an independent operation, sometimes with franchise from the manufacturer formerly employing the serviceman.

**NOTES** - (Local opportunities, rates of pay, etc.)

# EMPLOYMENT INFORMATION SERIES

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## OPERATING ENGINEER II

859.883-030

June, 1960

OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - Operates, maintains and repairs various types of power-driven construction machinery such as power shovels, cranes, derricks, hoists, pile drivers, concrete mixers, paving machines, trench excavators, bulldozers, tractors, and pumps. Must have wider range of skills than journeyman in any other building trade. For instance, for crane operation, manipulates various pedals and levers to rotate crane on its chassis and to raise and lower the crane boom and loadline. Also manipulates a variety of attachments to the crane boom--buckets for excavation work; pile drivers to drive steel beams, wood and concrete piling into the ground; and wrecking balls for demolition work. By contrast, for earth-boring machine operation, sets the proper auger (drill) in spindle, starts the machine, and stops it when the auger has penetrated the proper depth.

Operating engineers are often identified by titles describing the types of machines they operate.

**OPPORTUNITIES**

**Current** - On a national scale the large increase in construction activity promises thousands of job opportunities. Locally, however, conditions may vary widely. The current cut-back in highway construction in Ohio has decreased opportunities considerably. There is no apprenticeship program in Ohio at the present time, but a program is in the process of being set up. The applicant interested in this occupation should get up-to-date information concerning the opportunities in his community by contacting local unions, contractors, and the Ohio State Employment Service.

**Trends** - Larger, more specialized, and more complex machines, particularly those used in earth-moving, as well as smaller machines suitable for small construction projects, are continually being developed and are expected to be used to a greater extent. Increasing mechanization of material movement in factories and mines should also result in growing employment of these workers outside of construction.

**FIELDS OF EMPLOYMENT** - Construction work for contractors engaged in highway, dam, airport, and other large-scale engineering projects. Also on large building projects requiring extensive excavating, grading and landscaping. Also, on small jobs, hoisting materials. Some employment by utility companies, manufacturers, and business firms doing their own construction work as well as State, local public works and highway departments. Also, on power-driven equipment in factories and mines. Self-employment is rare, but when it occurs, the operator generally owns his own equipment.

## OPERATING ENGINEER II

AREAS OF EMPLOYMENT - Every section of the country, but mainly in the larger urban areas. Work may occur in remote locations where highway construction and heavy engineering construction, such as dams, are being built.

REMUNERATION - The wage structure for operating engineers is more complicated than for any other construction trade, with hourly rates established not only for different types of machines, but often for machines of the same type, but of different capacity. In 52 large cities in 1958, shovel operators averaged from $2.80 to $4.60 per hour; bulldozer operators, $2.50 to $4.60 per hour. In a representative Ohio area in 1960, union crane and hoist operators will be receiving $3.70 per hour before the end of the year. The apprentice rate usually starts at 50% of the journeyman rate.

METHOD OF ENTRY AND REQUIREMENTS - The usual entrance to the trade is informal. A young man with an aptitude for working with machinery and some relevant experience such as truckdriving, may begin work as an oiler or a helper, or may get a job operating one of the simpler machines, such as an air compressor. As openings occur he may be given a chance to operate somewhat more complicated machines, such as rollers. After some experience operating these machines, he is given the opportunity to operate more complex machines. Often, informal instruction is given to new personnel by experienced operators. Large contractors frequently have a wide range of construction equipment, thus affording opportunities to learn successively the operation of more complex equipment.

Handling of the more complex equipment requires good eye-hand-foot coordination, skill in precision handling of heavy equipment, and judgment in estimating proper load size.

Union Membership - A large proportion of operating engineers are members of the International Union of Operating Engineers.

WORKING CONDITIONS AND HAZARDS - Much of the operating engineer's work is performed out of doors. The work is active and sometimes strenuous. The operation of some of the machines, particularly bulldozers and some types of scrapers, is physically wearing because the constant movement of the machine shakes or jolts the operator.

ADDITIONAL INFORMATION - Local contractors, unions, and the Ohio State Employment Service.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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## OPTOMETRIST
## 079.108-026

Revised
June,
1960

## OCCUPATIONAL RELEASE

NATURE OF WORK - Optometrists examine eyes and do other work concerned with safeguarding and improving vision. They use special instruments and tests to find and measure defects in vision and, when needed, prescribe eyeglasses, eye exercises, or other treatment that does not require drugs or surgery. Most optometrists supply their patients with the eyeglasses prescribed. However, they usually have the lenses ground at an optical laboratory. Some optometrists fit lenses to frames and do minor repair work. A growing number of optometrists include visual training, the use of corrective eye exercises, in their practice. Some do other specialized work such as fitting persons who are nearly blind with telescopic spectacles, fitting contact lenses, studying the relationship of vision to highway safety, and analyzing lighting and other conditions that affect the efficiency of workers in industry. A few optometrists are engaged primarily in teaching or research.

Optometrists should not be confused with ophthalmologists, oculists or opticians. Ophthalmologists and oculists are licensed physicians who specialize in the medical and surgical care of the eyes and may prescribe drugs or other treatment, as well as lenses. Opticians grind lenses according to prescriptions for eye-glasses written by physicians who are medical eye specialists or by optometrists; they do not examine eyes or prescribe treatment. Optometrists do not treat diseases of the eye, but are trained in their detection and refer such cases for medical care.

OPPORTUNITIES

Current - Chief needs are those of replacement since the number of optometrists entering the profession annually is not equal to the number retiring. Applicants with the necessary qualifications have an excellent chance of admittance to a school of optometry.

Trends - The demand for eye-care services will continue to grow over the long run. Part of the expanded demand will be met by medical doctors who are eye specialists, but optometrists will continue to supply a substantial proportion of all eye-care services. In 10 years the shortage of licensed optometrists will be critical, due to expanding population needs.

For women - They constitute 5% of the profession and have many opportunities to work as associates, particularly in the field of visual training. Those in private practice have been particularly successful in work with children. Those who marry find it possible to continue their practice in many cases.

FIELDS OF EMPLOYMENT - Private practice, assisting established practitioners.

health clinics, hospitals, optical instrument manufacturers, and government agencies, particularly as commissioned officers in the Armed Services.

AREAS OF EMPLOYMENT - Large cities and industrial areas where many people are engaged in office work or other occupations which place a strain on the eyes. Communities, especially in the South, that have no optometric services available, will offer some opportunities for new graduates.

REMUNERATION - As in some of the other health fields, a low income must be expected for the first 2 or 3 years of practice. As practice becomes established, earnings usually rise significantly, Income averages more than $10,000 a year currently.

Practice in towns and small cities generally means higher net earnings, although some practitioners in large cities have very high incomes.

Salaried positions usually pay more in the beginning, but private practice is usually more lucrative over the long run.

REQUIREMENTS FOR ENTRY

General - Important qualifications include a liking for mathematics and scientific work, the ability to use delicate precision instruments, mechanical aptitude and good vision. Successful practice requires the ability to deal with people tactfully. Courses in science and mathematics are recommended for high school study.

Education - Five years of study beyond high school is the minimum education needed. Usually this consists of 2 years of pre-optometry education in any approved college, followed by 3 years of training in an optometry school. Some schools require a total of 6 years--2 of pre-optometry study and 4 in a school of optometry. Pre-optometry courses include mathematics and the basic sciences of physics, biology and chemistry, as well as general education courses. The curriculum in schools of optometry provides classroom and laboratory work, and experience in treating patients at the school's clinic. Most schools give their graduates the degree of Doctor of Optometry (O.D.) but some confer the degree of Bachelor of Science in Optometry or Master of Optometry. Specialization requires additional training. Teaching or research usually require a master's or Ph.D degree.

School locations - In Ohio, the School of Optometry, Ohio State University, Columbus. (5 year combined course)

Licenses - All States and the District of Columbia require a license, which can be acquired after graduating from an accredited School of Optometry and passing a State Board examination. Not all States approve all schools so the student should choose a school approved by the Board of Optometry in the State where he expects to practice.

WORKING CONDITIONS - Working hours in this profession are usually regular. Many offices are open 6 days a week and at least one night each week. Some practitioners keep only scheduled appointments. Since the work is not strenuous, optometrists can often continue to practice beyond normal retirement age.

ADDITIONAL INFORMATION - Local optometrists, American Optometric Association, Inc., 4030 Choteau Avenue, St. Louis 10, Missouri; School of Optometry, Ohio State University, Columbus; Ohio State Optometric Association, 85 East Gay St., Columbus, Ohio

NOTES - (Local opportunities, wages, etc.)

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

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# ORTHOPEDIC APPLIANCE AND LIMB TECHNICIAN

712.281-018

NATURE OF THE WORK The orthotist and prosthetist work together to make and fit artificial limbs. Working from an orthopedic doctor's prescription, these technicians apply their skill to make each dismembered and disabled person's rehabilitation process the easiest and most comfortable. Both the orthotist and prosthetist must have a good working knowledge of functional anatomy, of the basic principles of physical therapy, and a knowledge of general physics and elementary mechanics (including strength and selection of materials). Both will learn to sketch and read planning charts, to make casts and molds, to do heat treating and forging, to measure and fit supports and braces, and to select support materials. In addition, they will learn to operate a variety of instruments from lathes to sewing machines and blow torches.

The ORTHOTIST takes measurements for, designs, and manufactures the artificial support and limb. He selects material for each support that will best suit each client, keeping in mind the client's age, whether the limb is to be used in a corrective or supportive function, the duration for which the support will be used, and the cosmetic needs - those which will make the support appear most natural - in each case. Although he does not make the final fit, the orthotist must understand correct fitting and fitting techniques.

The PROSTHETIST assists the orthotist in measuring for, selecting materials for, and designing the artificial support. His service, however, goes beyond to actually fitting the new or repaired support. In this fitting, he forms and shapes sockets, fashions harnesses, assembles all extra parts, and actually fabricates completed limbs from the initial to the final product. In making and fitting each limb, the prosthetist, who works from a plaster cast of the dismembered part, familiarizes himself with each patient's nerve structure and bone and muscle location in order to fit and harness each limb and terminal device in the most comfortable, usable manner. After the fitting is complete, the prosthetist instructs each client in the function of his new support or limb.

The prosthetist should not be confused with the PHYSICAL THERAPIST (D.O.T. 079.378-034), one who works with rehabilitants individually in order that they might derive the greatest use from each artificial support.

**EMPLOYMENT OUTLOOK** With the increase in and greater acceptance of rehabilitative services, the need for both orthotists and prosthetists will continue to grow. Currently, there is a ready need for approximately 1,500 technicians in the United States in every area. Employers are more and more eager to train young people interested in learning the orthopedic technician's skills.

Recently, the trend in service has been directed away from the clinic setting and into private offices and laboratories. As this field grows, the need for experienced technicians to teach and do research will also steadily increase. Women, although they are not discouraged from entering this field, are better suited to such services as corsetiers, sewing machine operators, and leather workers. Employers are most receptive to hiring a rehabilitated handicapped person; their success can be a new client's best incentive.

## CLOSELY RELATED OCCUPATIONS

Dental Ceramics Technician
Dental Technician
Medical Laboratory Technician
Artificial Eye Glass Maker
Chemical Laboratory Technician
Medical Apparatus Model Maker
Medical Technician
Inspector, Dental, Medical, Orthopedic Equipment and Supplies
General Laboratory Technician (any field)

**AREAS OF EMPLOYMENT** Orthopedic technicians are found in private practice, in clinics in public health centers, hospitals, and rehabilitation centers, in veterans' installations, and in limb and appliance manufacturing industies.

The majority of technicians, although affiliated with clinics and hospitals in every area, are found primarily in larger metropolitan areas.

**REMUNERATION** Apprentices, assistants, technicians, orthotists, and prosthetists combined earn an average of between $115 and $160 per week. Both certified orthotists and certified prosthetists earn an average weekly salary of between $150 and $250 depending upon their work schedule, area of employment, and degree of experience. The assistant and technician earn between $75 and $150 per week. The wage of an apprentice in this field is determined by agreement between employer and employee. The two (2) year apprenticeship program offers a progressively increasing salary to the apprentice candidate, which may, at the end of his training, equal 85% to 95% of the orthotists's or prosthetist's salary.

## REQUIREMENTS FOR ENTRY

**General** The prospective apprentice candidate must be of legal working age, a graduate of an accredited high school or vocational high school or its equivalent (see the "Training Directory", pp. 102-107, for information about High School Equivalency examinations), and must have a high degree of mechanical aptitude and manual dexterity. In addition, he must be willing to work patiently and tactfully, often under stress, with handicapped people - instructing, giving confidence to, and encouraging them about prosthetic work. He must be interested in detailed work and be able to stand as much as 90% of each day. Previously, each technician was required to own his own tools; today, however, each employer supplies all materials needed.

Training Prospective prosthetists and orthotists may learn the skills of this profession through on-the-job and apprenticeship training or through a regular institutionalized program of study. On-the-job training, an individual agreement between employer and trainee, is a flexible program geared to the intelligence and ability of each trainee.

Apprenticeship training, a two-year program organized by the American Orthotic and Prosthetic Association, is now available in an increasing number of businesses and private firms.

An increasing number of technical schools, colleges, and universities are offering both two-year associate of arts degree programs and four-year bachelor of science degree programs. For interested applicants in the Ohio area, a two-year associate degree program is now offered at Northwestern University in Evanston, Illinois.

CERTIFICATION Orthotists and prosthetists alike are being encouraged to seek certification from the American Orthotic and Prosthetic Association. Although not a requirement at this time, certification may soon be necessary for a greater and greater number of jobs. Some cities may also require that each practitioner be registered and/or licensed to practice in that location.

AVENUES OF PROMOTION With experience, additional training, and demonstrated ability, one may advance to chief prosthetist, job foreman, manager, or superintendent of a manufacturing industry, or may open his own practice.

WORKING CONDITIONS In the private office and clinic, work space is clean, well-lighted, and well-ventilated. Work in the laboratory or on the manufacturing site may, however, be dusty and dirty due to materials used. One may work alone or with as many as twenty-five (25) other employees.

SOURCES OF ADDITIONAL INFORMATION Write or contact:

1) Local manufacturers and employers.

2) Local Ohio State Employment Service Offices.

3) American Orthotics and Prosthetics Association
919 Eighteenth Street, NW
Suite 130
Washington, D.C. 20006

4) Jack D. Arnold, Ph. D., Director
Prosthetic-Orthotic Education
401 East Ohio Street
Chicago, Illinois 60611

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BUREAU OF EMPLOYMENT SERVICES
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EMPLOYMENT INFORMATION SERIES

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# PAINTERS
840.781-010
# PAPERHANGERS
841.781-014

NATURE OF THE WORK The PAINTER works on all kinds of surfaces (including wood, structural steel, and clay) inside and out from walls and woodwork to churches and industrial plant decoration. He first prepares the surface to be painted, one of the most important aspects of any painting job: new surfaces are sandpapers or sandblasted according to desired finish; remodeled surfaces or those which are to be repainted must be sandpapered to remove rough spots, cleaned to remove all dust, dirt, and grease, filled where nail holes and wear have left cracks and holes, and must have all old paint removed by scraping, using a powerbrush, sandblasting, or by heating the surface with a blowtorch and then scraping. He may, prior to painting, apply paint primer or wall sealer to insure the quality and durability of the paint job and to render the desired finish. Next he applies his knowledge of paint chemistry in mixing exactly the correct paints. Finally, he applies the required paint, varnish, lacquer, stain, enamel, or chemical coating to the surface by brush, roller, or spray gun.

The PAPERHANGER does a variety of work from plaster repairing to the actual wall-papering itself. First, the surface is prepared: plaster is patched, old paper is removed, painted surfaces are sanded, and/or sizing is applied (sizing prevents plaster suction and offers a better adhesive surface for paper). The paperhanger measures each surface to be papered, mixes the adhesive or paste, cuts paper or fabric-coated material to fit (matching textures and designs), and applies paper, smoothing and fitting it with a dry brush.

Both the painter and paperhanger may be trained under the same or similar programs. Often one man may apply both skills in the labor market. Each of these craftsmen has his own set of basic tools: the painter - brushes, drop cloths, ladders, and scaffolding in some cases; and the paperhanger - buckets, brushes, and cutting and measuring tools. Among all workers in the building construction trades, the painter and the paperhanger apply their skills last; theirs is the responsibility of bringing out the best in each new, remodeled, or reworked structure and accenting and augmenting other construction workers' efforts.

**EMPLOYMENT OUTLOOK** The need for painters will increase slowly in the next few years in new building construction, as compared with other building construction occupations. Pre-primed and pre-painted building materials, more efficient paint application processes, and an increase in aluminum siding and related aluminum-coated products, in general, have and will continue to reduce the need for a painter's services as they have been known in the past. Many new materials have been introduced into building construction, however, which fall under the painter's jurisdiction and which may help off-set those factors contributing to painters' declining employment in building construction. For those who keep pace with these new materials, employment opportunities will continue to be available in increasing numbers. As building construction increases and painters retire or leave the trade, new workers will be needed, especially in industrial and commercial centers and in large metropolitan areas.

Paperhangers' employment will also increase slowly due to changes in design and personal tastes, the emphasis now being on painted and masonry finished surfaces.

Both painters and paperhangers will, however, find greater numbers of employment possibilities in remodeling and maintenance work currently and in the near future.

## CLOSELY RELATED OCCUPATIONS

Dry Wall Sander
Enameler
Glass Tinter
Maintenance-Interior Finish Painter
Paint-Stripping Machine Operator
Varnisher
Whitewasher

**AREAS OF EMPLOYMENT** Painters and paperhangers are employed by general, building, and painting contractors in new building construction and in remodeling and repair work. They also perform a variety of maintenance services in hotels, office buildings, utility companies, manufacturing firms, schools, and in many other large private, commercial, and government units.

The greatest opportunities exist in medium and large-sized metropolitan areas where centers of commercial and residential building occur. Many painting and papering firms, although located in a metropolitan area, travel extensively, taking job orders in many parts of the state and region. An increasing number of people are turning to self-employment as painters, paperhangers, or in a combined painting-papering enterprise.

A great number of painters and paperhangers are members of the Brotherhood of Painters, Decorators, and Paperhangers of America, a smaller number belonging to other labor unions.

REMUNERATION The national 1967 average hourly wage for both painters and paperhangers was $4.77; brush painters averaged $4.71 per hour; spray gun and roller painters averaged $4.80 per hour; and paperhangers averaged $4.71 per hour.

In Ohio, the basic entry rates for union-affiliated journeymen range from $4.20 to $4.57 per hour, each metropolitan area being different. The painter and paperhanger apprentice begins at 50% of the journeyman's wage (for the first six months) and increases at six (6) month intervals to 85% of the journeyman's wage during the last six (6) months' period. Ohio union-affiliated painters and paperhangers earn between $4.20 and $6.22 per hour on an average, while non-union workers earn an average of between $2.50 and $3.75 per hour. Each painter and paperhanger may expect such fringe benefits as social security, unemployment compensation, and total disability insurance.

## REQUIREMENTS FOR ENTRY

General Each prospective painter and paperhanger must follow a program of formal or informal training to be awarded journeyman status, a position which requires three years' training and/or experience. He may follow a high school vocational education program where the basics of the trade are presented, followed by a period of formal or informal on-the-job training. He and his employer may agree upon a complete on-the-job training program, either full-time or part-time depending upon the applicant's employment status during training. Further, each prospective painter and paperhanger should have good manual dexterity, a keen ability to discriminate color, and should not be allergic to paint, paint fumes, or any of the materials of the trade.

The majority of prospective painters and paperhangers, however, learn this trade through a registered, three-year apprenticeship program, one which combines classroom and on-the-job training. Apprenticeship training applicants must be of legal working age and not more than 25 years of age (this age limit is extended for those who have served in the Armed Forces), in good physical condition, a high school graduate or the equivalent (see the "Training Directory," pp. 102-107, for further information about High School Equivalency examinations), and of average or above intelligence. Upon registration, each applicant is asked to take an aptitude test (on which he must score 70% or above to be considered further) and may undergo a personal interview. Most apprenticeship programs are supervised by a local Joint Apprenticeship Council and are structured under standards established by the National Bureau of Apprenticeship and Training.

Training No matter where and how a painter and paperhanger are trained, the knowledge they must acquire is the same. They learn to safely use, care for, and handle all materials and tools of the trade; they learn many methods of preparing, repairing, and sizing walls and surfaces; they learn how to remove wallpaper and paint; and they learn the best techniques for applying each material. Their classroom study includes instruction in color harmony, paint chemistry, making cost estimates, and in mixing, matching, and making paint. They study the relationship between painters' and paperhangers' duties and among others employed in building construction occupations.

AVENUES OF PROMOTION The painter and paperhanger, with experience and a knowledge of the field, may advance to job foreman, cost estimator, or general foreman in larger paint contracting firms. Further advancement may be found by opening a private business or entering the sales field.

WORKING CONDITIONS The painter and paperhanger stand during most of the work day. The work, although it doesn't require great strength, is strenuous - lifting, placing, stretching, and climbing all being a part of each assignment. They are both subject to falls and falling equipment; painters must avoid paint fume inhalation and subsequent poisoning.

The painter generally works, as does a paperhanger, a regular 40-hour week with new building construction firms. Building and remodeling deadlines, however, may call for irregular and extended work hours.

## SOURCES OF ADDITIONAL INFORMATION

1) Local Ohio State Employment Service Offices.

2) Local general and paint contracting firms.

3) Brotherhood of Painters, Decorators, and Paperhangers of America local unions.

4) Department of Industrial Relations
Ohio State Apprenticeship Council
220 Parsons Avenue, Room 310
Columbus, Ohio 43215

5) U. S. Department of Labor
Bureau of Apprenticeship and Training
74 East Gay Street, Room 202
Columbus, Ohio 43215

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# EMPLOYMENT INFORMATION SERIES

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# PERSONAL SHOPPER

296.358-010

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## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Also known as personal service shopper, shopper, shopper's aid, or special shopper. Selects merchandise for customers according to written or telephone requests. May act as consultant or advisor and accompany customer through store offering suggestions, although shopping "with customers" is now very rare. (Most sales personnel are trained to consult with and advise customers in their departments.)

Usually is engaged in shopping involved orders such as complete outfits or high fashion items, mostly for people out-of-state and frequently for people in foreign countries.

**OPPORTUNITIES**

**Current** - Very limited. One of Ohio's larger department stores employs only two personal shoppers out of a staff of 23 mail order people.

**Trends** - Static. No increase in this employment is expected at the present time.

**Seasonal factors** - Late October and November constitute the one peak period of the year because of out-of-state and overseas Christmas gift shopping.

**FIELDS OF EMPLOYMENT** - Department stores, mail order houses, specialty shops, magazines, newspapers, and independent shopping bureaus.

**AREAS OF EMPLOYMENT** - Large cities.

**REMUNERATION** - The starting rate generally ranges from $40 to $50 per week.

**METHODS AND REQUIREMENTS OF ENTRY** - Personal shoppers are generally chosen from the ranks of mail-order division personnel or from sales people with store-wide experience. Selection factors include the ability to follow oral and written directions, memory for names and persons, memory for details, attractive appearance, color discrimination, exceptional taste in clothes, adjustment to routine, poise, and charm (for those in direct contact with customers). Knowledges include that of style, artistic appreciation, and when working for stores in some seaboard cities, reading, writing and speaking ability in one or more foreign languages may be necessary.

**WORKING CONDITIONS** - Inside, working in and around others.

# PERSONAL SHOPPER

## AVENUES OF PROMOTION

Most workers start in the occupation as telephone order takers or sales clerks. They may be promoted from this job to correspondent, head shopper, or shopper specializing in luxury and high-price merchandise. Promotion is generally based on training, work experience, and seniority.

**FOR ADDITIONAL INFORMATION** - Contact local department stores.

**NOTES** - (Local opportunities, wages, etc.)

# Employment Information Series

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**PHARMACIST**
**074.181-010**

NATURE OF THE WORK  The pharmacist fills prescriptions ordered by physicians and other practitioners and stores and distributes medicines and drugs, including narcotics. He also advises doctors, other health professionals, and the public on the use and availability of drugs. A pharmacist must understand the composition, manufacture, action, and effect of drugs, and be able to test them for purity and strength. Compounding, the actual mixing of ingredients to form powders, pills, capsules, ointments, and solutions is only a small part of the present-day pharmacist's work. Today, most drugs are produced by manufacturers in the form used by the patient.

The place of employment determines the character of professional duties. Many community pharmacies require a combination of professional, sales, and managerial functions; however, some pharmacists operate prescription pharmacies which handle only drugs and medical supplies. Pharmacists in hospitals fill prescriptions and advise the medical staff on the selection and effects of drugs and may also manufacture sterile solutions, purchase medical supplies, teach in schools of nursing, and perform administrative duties. Some pharmacists employed as medical-service representatives (detail men) by drug manufacturers and wholesalers inform doctors about new drugs and sell medicines to other pharmacists. Others teach in colleges, perform research, supervise the manufacture of pharmaceuticals, develop new drugs, test drugs in federal and state food and drug laboratories, write for pharmaceutical journals, or do administrative work.

EMPLOYMENT OUTLOOK  The steady increase in the demand for registered pharmacists is expected to continue. The increasing number of medical facilities including pharmacies, the expansion in drug research and manufacture, and replacement needs are expected to provide good employment opportunities in this field. A registered pharmacist can generally find attractive openings in the locale and area of pharmacy he desires.

Approximately ten per cent of all pharmacists are women. All schools of pharmacy accept women students and the number enrolled is steadily increasing. Women pharmacists are generally employed in hospital pharmacies, retail, and in laboratory work. There is a great demand for married women to work part-time in community pharmacies.

REMUNERATION  Beginning salaries for registered pharmacists in Ohio working in retail pharmacies, range from $150-$200 per week depending on the size and location of the store and the number of hours worked.

Pharmacists in industry average $8000 to $15,000 per year and frequently have excellent fringe benefits as well.

## REQUIREMENTS FOR ENTRY

General: Prospective pharmacy students should have a good high school background in mathematics and science. In addition, orderliness, accuracy, and liking for people are desirable qualities. For those planning to become retail pharmacists, the ability to deal with people and manage a business is of special importance.

Training: Graduation from a five year course in an accredited school of pharmacy is necessary for licensure in Ohio. An internship of at least one year, to be served during vacation periods or after graduation is also required.

School locations: Approved and accredited colleges of pharmacy in Ohio are: Ohio State University, Columbus; Ohio Northern University, Ada; University of Cincinnati, Cincinnati; University of Toledo, Toledo.

Licenses, examination: Persons desiring registration as pharmacists must initially pass a written and oral examination conducted by the Ohio State Board of Pharmacy, and must renew their certificate of registration every three years. Written tests cover subjects of pharmaceutical chemistry, materia medica, pharmacology, pharmacognosy, pharmacy administration, and the theory and practice of pharmacy. Applicants are also given practical work (actual compounding of prescriptions) combined with an oral examination. Ohio has established reciprocal registration agreements with all states except Florida, New York, and California. Fees include: $50 at time of examination for certification; $16 for renewal of certificates every 3 years; $100 for registration under reciprocal agreements. Interns must be registered with the Ohio State Board of Pharmacy - fee $10.

WORKING CONDITIONS Retail pharmacists generally work more than the standard 40-hour week; 45-48 hours is quite common; over 50 hours a week not unusual. Self-employment generally means longer hours. Industry, hospitals and Government agencies have the standard 40-hour work week.

AVENUES OF PROMOTION Workers enter this profession as interns to registered pharmacists. The great majority of pharmacy school graduates first go to work in retail pharmacies; others start in hospital pharmacies and some in manufacturing. Workers may be promoted from prescription pharmacists to assistant manager, and manager, or to supervisory positions in hospitals or manufacturing plants. Usual promotion basis is work experience and professional and managerial ability. Proprietorship of a drug store is somewhat dependent on the financial status of the individual. About 50 per cent of retail pharmacists are proprietor-owners.

SOURCE FOR ADDITIONAL INFORMATION Write or contact any of the above accredited colleges of pharmacy in Ohio; Ohio State Board of Pharmacy, 21 West Broad Street, Columbus, Ohio; Ohio State Pharmaceutical Association, 40 South Third Street, Columbus, Ohio; American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington D.C. 20037

NOTES: (Additional local information).

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# PHYSICAL THERAPIS
079.378

**NATURE OF THE WORK** The physical therapist specializes in the rehabilitation of people with injuries and/or diseases affecting muscles, joints, nerves, and bones through the use of heat, cold, light, electricity, massage, exercise, and mechanical devices. He may treat physical injuries, deformities, and disabilities resulting from multiple sclerosis, cerebral palsy, and arthritis, who have been injured in industrial, home, and highway accidents, crippled children, and disabled veterans.

Physical therapists' responsibilities may include: recording patients' progress, performing muscle, nerve, and prosthetic evaluation, carrying out an effective treatment program, and helping to plan and execute a follow-up program for outpatients.

Directed by a physician, the physical therapist may work as a member of a specialized rehabilitation team including a teacher, nurse, medical and psychiatric social workers, occupational therapist, psychologist, speech therapist, recreational worker, and vocational counselor.

**EMPLOYMENT OUTLOOK** Demand is expected to remain great throughout the 1960's and 1970's as a result of the increasing use of physical therapy in caring for the injured, diseased, and aged. Vocational rehabilitation and crippled children's programs, in which states are aided by Federal funds, will further bolster the demand. Turnover is high because many graduates are young women who may leave for marriage or family responsibilities. During recent years, an increasing number of men have been entering the field.

**FIELDS OF EMPLOYMENT** Physical therapists are employed in general or specialized hospitals, schools for crippled children, physicians' offices, physical therapy clinics, nursing homes, public health services, athletic departments, rehabilitation centers, university physical therapy departments, and with the Armed Forces, World Health Organization, and the Peace Corps.

**REMUNERATION** Salaries compare favorably with those in other professions requiring similar preparation. Median salaries on a national survey in 1967 were:

Recent Graduates: $6000 and up
Experienced physical therapists: $7500 and up
Supervisors, Teachers, Consultants: $9000 and up
Salaries may be supplemented by maintenance and/or meals, by laundry service, group health policies, paid vacations, and time allotted for further study.

## REQUIREMENTS FOR ENTRY

General High school graduation with a college preparatory course is required. The student who is considering physical therapy as a career should have the ability to get along with people and a strong desire to help them, initiative, and aptitude in the sciences. Physical therapy takes a great deal of patience and the ability to work toward a long-range goal even though progress seems slow.

Training There are three basic plans of education for physical therapists. A four year bachelor's degree program for high school graduates; a twelve month certificate program for students who hold bachelor's degrees; and a graduate training program leading to a master's degree for students with a bachelor's degree and the requisite background. There are now 44 schools of physical therapy in the United States which have American Medical Association approval including Western Reserve University, Cleveland, Ohio and the Ohio State University, Columbus, Ohio.

Curriculum A general curriculum leading to the bachelor of science degree in physical therapy includes, in addition to basic requirements to satisfy all bachelor degree programs, courses in physics and chemistry, zoology, anatomy, physiology, psychology, natural science, and physical therapy. The senior year of study consists almost entirely of physical therapy courses including clinical training.

License Most states require licensing for the practice of physical therapy. Graduates of approved programs are admitted to the examination required of all applicants requesting licensing. In Ohio, there is a $25 examination fee charged of all applicants (cost of license included in this fee) and an annual renewal license fee of $5.00 (for further information regarding licensing, see Part III, the Ohio Employment Information Series, the licensing brief, "Physical Therapist.")

AVENUES OF PROMOTION Many short courses of instructions have been instituted in the past few years in order that graduate physical therapists may increase their knowledge and their value to employers. Advancement to supervisory or administrative positions is available in large hospitals or organizations. Some opportunities for advancement exist through transfer to related fields, such as medical equipment sales, prosthetic engineering, and administration of schools for crippled children and rehabilitation centers.

SOURCES OF ADDITIONAL INFORMATION American Physical Therapy Association, 1790 Broadway, New York, New York, 10019; The Ohio State University, School of Allied Medical Services, 410 West 10th Avenue, Columbus, Ohio, 43210; Western Reserve University, 11418 Bellflower Road, Cleveland, Ohio.

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## PHYSICIAN
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## OCCUPATIONAL RELEASE

**NATURE OF THE OCCUPATION** - The physician primarily diagnoses diseases and treats people who are in ill health.In addition, he is concerned with prevention of diseases and rehabilitation of the injured or ill. He generally examines and treats patients in his own office, and in hospitals, but also visits patients at home when necessary. Some physicians combine medical practice with research or teaching positions or perform administrative work in hospitals, professional associations, and other organizations.About half of the total number of the physicians in private practice are general practitioners while the other half are specialists. Specialization has attracted many more physicians in recent years. At the present time there are 10,548 physicians practicing in Ohio.In the academic year 1957-58, 1240 students were attending Ohio medical schools, and 292 graduated.

**OPPORTUNITIES**

**Current** - Numerous, particularly in rural areas and in public health, rehabilitation, industrial medicine, mental health, obstetrics, pediatrics, medical school faculty, medical research, Federal, State and local agencies.

**Trends** - Demand for new physicians will remain great. In 1975 the United States will fall short by 3100 physicians of the anticipated need, despite the fact that many medical schools are expanding their facilities, and some new medical schools will be in operation.

**Women** - constitute 6% of the profession and will have continued opportunities chiefly in pediatrics, psychiatry, obstetrics, gynecology, internal medicine and anesthesiology.

**FIELDS OF EMPLOYMENT** - Private practice; hospitals as interns, residents and staff members; Federal government agencies such as Veterans Administration, Public Health Service; Armed Forces as commissioned officers; private industry, State and local health departments, teaching and administration in medical schools, research foundations and professional organizations.

**AREAS OF EMPLOYMENT** - State-wide with greatest need for physicians in rural areas. (One new 4 - year scholarship is awarded annually to an Ohio rural resident for study at any approved school of medicine. For information, write to the Committee on Rural Health, Ohio State Medical Association, 79 East State Street, Columbus 15, Ohio.)

**REMUNERATION** - 1958 estimates show self-employed physicians in general practice averaging $15,150 and specialists averaging $24,500 per year. The physicians' professional expenses must come out of this amount. Interns were averaging $155 a month in hospitals affiliated with medical schools and $198 a month in other hospitals. Room, board, and maintenance were included in many cases. It may take a year or two for a doctor to earn more than the minimum to pay expenses, but income usually rises rapidly after that.

**METHOD OF ENTRY AND REQUIREMENTS**

**Personal** - Strong desire to become a doctor, above-average intelligence, interest in science, good judgment, ability to make decisions in emergency situations, and emotional stability.

Educational - In addition to graduation from an approved college, the following factors are considered: scholastic record, amount and kind of pre-medical education, score earned on the Medical College Admission Test, and evidence of character, personality and leadership qualities. While nearly twice as many students applied for admission in 1958 as could be accepted, medical schools report a need for a greater number of highly qualified candidates. The rising number of students leaving medical school because of scholastic failure would seem to justify this attitude. State licensing examinations are required to practice in all states and the District of Columbia.

Training - Minimum of 8 years following high school--3 years of pre-medical study, 4 years of professional education in a medical school, and 1 year hospital internship. Some medical schools require 4 years of college education. (Nearly 80% of medical school entrants in 1957 had completed 4 years.) Pre-medical study must include courses in English, physics, biology and inorganic and organic chemistry. Students are also encouraged to acquire a broad general education. Medical school includes laboratory and classroom work in anatomy, biochemistry, physiology, pharmacology micro-anatomy and pathology, plus work in hospitals and clinics under the supervision of an experienced physician; learning to take case histories, performing physical examinations and recognizing diseases. One year internship follows. Many physicians spend an additional year as an intern or resident in a hospital.To become a specialist the physician needs 2 to 4 more years of training followed by 2 or more years of practice in specialty. The training period is acquired at a hospital where the physician has received an appointment as a resident and he follows a formally organized program of carefully planned assignments under the supervision of competent supervisors. Doctors interested in teaching or research may take graduate work leading to the Master's or Ph.D degree in a field such as biochemistry or microbiology.

Financing - A recent study of medical school expenses shows that among students graduating in 1959, the average cost of tuition and fees, room and board, and other school and living expenses was $2,836 a year for unmarried students and $3,271 a year for married students. Costs tend to be lower at public medical schools than private schools. Scholarship and loan provisions in medical schools have not kept pace with related graduate fields-master's and Ph.D. degree studies are easier to finance. (The Surgeon General's Consultant Group on Medical Education has recently recommended additional private, State and Federal scholarship and loan programs. The qualified student would be wise to investigate current and planned methods for financing his medical school education.)

Ohio Medical Schools - University of Cincinnati, Ohio State University, Western Reserve University.

WORKING CONDITIONS - Many physicians work long and irregular hours. Most specialists work fewer hours per week than general practitioners. As doctors grow older, they tend to work shorter hours. Many continue in practice well beyond 70 years of age.

OTHER SOURCES OF INFORMATION - Council on Medical Education and Hospitals, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois; Association of American Medical Colleges, 2530 Ridge Avenue, Evanston, Illinois; Ohio State Medical Association, 79 East State Street, Columbus, Ohio.

# EMPLOYMENT INFORMATION SERIES

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OCCUPATIONAL RELEASE

## PLASTERER

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June,
1960

**NATURE OF THE WORK** - Applies gypsum plaster to walls and ceilings in the interior of buildings to produce finished surfaces. Also applies "stucco" on the building exteriors. Follows blueprint instructions, and may also make intricate ornamental designs furnished by architect, such as cornices and paneling. Also applies gypsum materials used in fireproofing structural steel or for insulating exterior walls. In exterior work uses a trowel to spread gypsum plaster (mixture of chalk, fiber, sand, or other ingredients) on walls and ceilings of masonry, rock lath, or metal lath. Usually applies two separate base coats of plaster to a total thickness of 1/8 of an inch, then may trowel it to a smooth surface or finish it in a variety of textures. In exterior stucco work, applies a mixture of portland cement and sand to masonry or metal lath, in the same manner as interior plastering. The finish coat usually consists of a mixture of white cement and sand or a patented finish material which may be applied in a variety of colors and textures. (In many small localities the journeyman plasterer also performs the work of the cement finisher.) Plaster-mixing machines are largely replacing hand-mixing techniques. When working with the recently developed lightweight plasters, plasterers are making increasing use of plaster machines to spray the plaster on walls and ceilings. In particular, these lightweight plasters have been used for fireproofing structural steel in large buildings.

## OPPORTUNITIES

**Current** - On a national scale, increased building and replacement needs should create many openings during this decade. On a local scale, conditions may vary widely and the number of apprentices accepted annually is apt to remain static. Up-to-date information should be obtained from unions, contractors, and the Ohio State Employment Service.

**Trends** - Recent changes in plastering materials and improved methods of application are increasing the scope of the craft and creating new work opportunities. Improved lightweight plasters are being used increasingly because of their excellent sound-proofing, acoustical, and fireproofing qualities. Another development is the marked style trend toward the greater use of curved surfaces and ceilings made of plaster, both as a form of architectural treatment and to achieve special lighting effects. Factors counterbalancing these developments will be the continuing trend toward the use of nonplaster (drywall) construction, and much less extensive use of ornamental plastering in large office buildings, banks, churches, theaters, and hotels.

# PLASTERER

**FIELDS OF EMPLOYMENT** - Chiefly in new building construction. Also in extensive building alterations.

**AREAS OF EMPLOYMENT** - Nationwide and Statewide.

**REMUNERATION** - A 1958 survey of 52 largest cities showed an average hourly wage of $3.54. The 1960 union rate in a representative Ohio area-- $3.70 per hour. Slack periods reduce these earnings considerably on an annual basis and maintenance and repair work occur infrequently to supplement earnings. The starting apprentice rate is usually 50% of the journeyman rate.

**METHOD OF ENTRY** - A 3 to 4 year apprenticeship is generally recommended although a good number of workers have learned the skills of the trade informally by working for several years as helpers or laborers, or observing or being taught by experienced plasterers.

**REQUIREMENTS FOR ENTRY** - Applicants should be between the ages of 18 and 25 good physical condition and manual dexterity are important assets.

**Training** - The work program teaches the apprentice how to use plastering tools and materials, how to apply the various coats, texture finishing, installation of acoustical tile, cork, and similar materials; how to use browning and finishing machines; how to prepare molds, templates and cornices, and how to lay out groins, arches, and coffered ceilings. Also becomes familiar with work of other trades to determine whether lathing or other preparatory work is satisfactory. Related classroom instruction includes such subjects as drafting, blueprint reading, and mathematics.

**Union Membership** - A large proportion of plasterers are members of unions--the Bricklayers, Masons and Plasterers International Union of America or the Operative Plasterers' and Cement Masons' International Association of the U. S. and Canada.

**WORKING CONDITIONS AND HAZARDS** - Plastering requires considerable standing, stooping, and lifting. Most plastering work is done indoors.

**AVENUES OF PROMOTION** - Most plasterers remain journeymen throughout their working life, but some may advance to jobs as foremen or estimators. Many are self-employed; some expand into contracting.

**ADDITIONAL INFORMATION** - Local contractors, unions, Ohio State Employment Service.

**NOTES** - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service

PLUMBERS
862.381-074
AND
PIPE FITTERS
862.381-042

Revised
June,
1960

## OCCUPATIONAL RELEASE

NATURE OF WORK - Highly skilled workers who install, alter and repair pipe systems. Also install plumbing fixtures and appliances, and heating and refrigeration units. Pipe systems provide steam, water or other liquids, air or gas which are needed for sanitation, heat, power, waste disposal, fire protection, and other industrial uses. Install such systems in residential and commercial buildings, schools, power and chemical plants, sewage and water treatment plants, and other industrial establishments. Many operations requiring various skills are performed when installing pipe systems. These include the bending of pipe and making welded, brazed, calked, soldered, or threaded joints. After a pipe system is installed, the plumber or pipefitter tests for leaks by filling pipes with water or air under pressure, and by using other methods. Use handtools, such as wrenches, reamers, drills, braces and bits, hammers, chisels and saws. Also use gas or gasoline torches and welding, soldering, and brazing equipment in their work. Power machines are often used to cut, bend, and thread pipes. Hand-operated hydraulic benders are also used to bend pipe. This broad field of work is sometimes considered to be a single trade. However, plumbers and pipefitters may do somewhat different types of work, particularly in large cities. Plumbers mainly install water, gas and waste disposal systems, particularly those which must be connected to public utility systems. Pipefitters install heating lines, such as hot water, and steam fitting systems, especially in industrial and commercial establishments. For example, they install pipes for ammonia systems in refrigeration plants, automatic sprinkler systems, lines for compressed air and industrial gages, and complex pipe systems in oil refineries, chemical plants and food-processing plants... Some plumbers and pipefitters specialize in gas fitting and steamfitting. Gas fitters install and maintain the gas fittings and the central gas main extensions which connect the main gas line to homes. Steam fitters assemble and install steam or hot water heating systems.

### OPPORTUNITIES

Current - A continued rapid rise in employment in this trade is expected during the 1960's. In addition to openings resulting from the increase in employment, many job opportunities for new workers will arise as a result of replacement needs. (7-8000 annually on a nation-wide basis.) Locally, the number of apprentices accepted tends to remain static. Up to date information should be obtained from local unions, contractors or local offices of the Ohio State Employment Service.

Trends - The anticipated 40 to 50 percent rise in construction expenditures predicted for this decade will contribute to an expected rise in employment in these occupations. Others factors include the increasing importance of plumbing and pipe fitting in residential construction with more bathrooms per dwelling unit, and widespread installation of appliances such as washing machines and waste disposals. Also, the increasing number of installations of automatic heating systems.Industrial developments such as growth of the chemical and petroleum refining industries, and the greater use of refrigeration and air conditioning equipment will also require more pipefitting work. Some technological developments such as the growing use of factory prefabricated plumbing assemblies, may limit the employment growth to a degree.

FIELDS OF EMPLOYMENT - Plumbing and pipefitting contractors in new building construction or doing repair, alteration or modernization work. Government agencies, public utilities, ship and aircraft companies. Maintenance, particularly in petroleum, chemical, and food-processing industries where the industrial operations include the processing of fluids through pipes.

AREAS OF EMPLOYMENT - Almost every community in the country, but concentrated in the highly populated and industrialized areas. Those specializing in steam and hot water heating systems are employed in large northern cities.

REMUNERATION - 1958 average rate in 52 large cities - $3.70 per hour for plumbers and $3.71 per hour for pipefitters. 1960 rate in representative Ohio area - $3.75 per hour for both. Seasonal factors affect these occupations much less than the other building trades.

METHOD AND REQUIREMENTS FOR ENTRY - Most training authorities recommend a 5-year apprenticeship program. A substantial number of craftsmen have learned the trade informally, many with some knowledge gained from trade school or correspondence courses... Apprentice applicants are generally required to be between the ages of 16 and 25 and in good physical condition. A high school education or its equivalent, with courses in mathematics, physics and chemistry, is desirable. Applicants are often required to take aptitude tests, particularly to determine whether they have the high degree of mechanical aptitude required in this field. Apprenticeship programs include both on the job and classroom instruction, and a combined plumber-pipefitting apprenticeship may be followed.
A jouneyman's license is required for plumbers in some localities.

Union Membership - United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada.

WORKING CONDITIONS AND HAZARDS - Work is active and sometimes strenuous. Frequently it is necessary to stand for prolonged periods and occasionally work in cramped or uncomfortable positions because of working in relatively inaccessible places. Most of the work is indoors. Danger is risked from falls from ladders, cuts from sharp tools, and burns from hot pipes or steam.

AVENUES OF PROMOTION - May become foreman for a plumbing contractor, go into business for themselves, or become a contractor.

ADDITIONAL INFORMATION - Local plumbing and pipefitting contractors, unions, local apprenticeship committee, Ohio State Employment Service office.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

## OCCUPATIONAL RELEASE

**PATROLMAN**
375.268-010

Revised
April
1963

**NATURE OF THE WORK** - The duties of a policeman include the protection of life and property, the enforcement of laws and ordinances, preservation of peace, and the detection and apprehension of criminals. Performs other duties as assigned to him. Patrols a regularly assigned area either on foot or by motor vehicle. May be assigned special duties involving one activity, such as, laboratory work, radio communications, firearms and fingerprint identification, etc. May investigate particular types of crime, e.g., those related to homicide, narcotics, or burglary or work with specific groups, such as, youth and women.

### OPPORTUNITIES

**Current** - The expansion of individual police departments has created a need for more men in traffic control and crime detection and prevention. A number of openings are created annually as a result of the need to replace those who die, retire, or leave the occupation for other reasons.

**Trends** - The growth in population, especially in and around the larger cities, will create a need for more men. Technological advances will influence the number of openings in the future and the nature of the work.

**Women** - Most policewomen are employed in crime prevention and detection work with girls and women. They make up a small percentage of the total number employed.

**FIELDS AND AREAS OF EMPLOYMENT** - Policemen are employed by city, county, state, and federal governments. In addition, some private employers hire protective service workers.

**REMUNERATION** - The approximate entrance salary for policemen in Ohio ranges from $3,480 to $5,278 per year. Salaries are dependent upon the size of the city and the amount of money made available by the local government. The majority of policemen receive periodic increases each year until they reach their maximum salary. Salaries for police chiefs range from less than $5,000 a year in some small cities to more than $14,000 a year in a few metropolitan areas. Most police agencies give their employees a special allowance for uniforms and furnish the special equipment they use, such as, revolvers, night sticks, handcuffs, and badges. Extra benefits include paid vacations, sick leave, liberal retirement systems, and group medical, surgical, and life insurance plans.

### REQUIREMENTS FOR ENTRY

**General** - Must be a citizen of the United States and 21 years of age. Pass a written and oral examination, and undergo a character and background investigation. Possess a genuine interest in people and a personal respect for law and order. The qualities of honesty and emotional stability are important. Capable of analyzing a situation, making an independent decision, and acting resourcefully. Have the ability to write clear and accurate reports, understand and follow oral directions, make complete and accurate observations, and learn the use and care of equipment. May have to be a resident of the area. Will serve a probationary period.

Education - High School graduation or its equivalence is necessary for entrance into this occupation. Will receive on-the-job training in such areas: self-defense, proper care and use of firearms, state criminal laws and local ordinances, accident investigation, police procedures, search and seizure, etc. The amount of instruction ranges from two (2) weeks to several months. Will be assigned to work with an experienced officer for a short period of time.

Physical - Must pass a physical examination and performance test, and meet certain height and weight requirements.

WORKING CONDITIONS - The majority work a 40 hour week, although the average in small towns is 48 hours. Will work nights, holidays, and weekends on a rotation basis.

AVENUES OF PROMOTION - With experience the policeman may be promoted to sergeant, lieutenant, and finally captain. Advancement usually depends upon the individual's position on the promotion list. Position on the list is based on written examination and work performance.

SOURCES FOR ADDITIONAL INFORMATION - Write or contact: International Association of Chiefs of Police, 704 17th Street NW, Washington 6, D.C.; local police department or civil service board. Read: "Policemen" Occupational Outlook Handbook, United States Department of Labor, Washington 25, D. C.

# EMPLOYMENT INFORMATION SERIES

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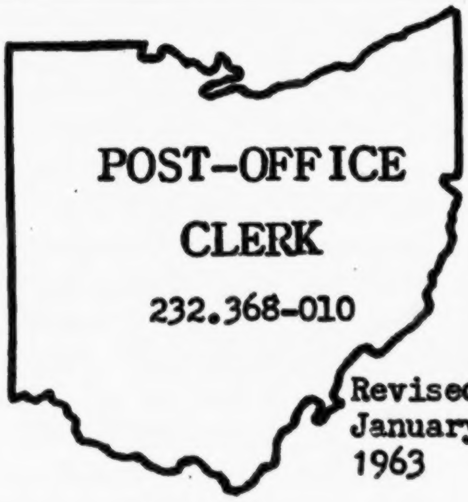
## OCCUPATIONAL RELEASE



## POST-OFFICE CLERK

232.368-010

Revised
January
1963

**NATURE OF THE WORK** - Depends greatly upon the size of the post office. May perform one or more of the following duties: separates outgoing mail into parcel post, paper mail, and letter mail; cancels outgoing mail by operating a canceling machine or using a hand stamp; sorts outgoing and incoming mail into one of several local and distant groupings. Sells postage stamps, money orders, postal cards, and stamped envelopes. Checks envelopes and packages to see if sizes are acceptable. Registers, insures, and computes mailing costs of letters and parcels. Accepts deposits in postal savings accounts; rents post office boxes; answers questions on rates, mailing restrictions, and other postal matters; assists individual in filing a claim for damaged mail; and posts circulars.

**OPPORTUNITIES**

**Current** - At present there is a need for replacements as a result of workers leaving the service to enter other fields of work, retirements, or deaths. Increased postal activities have brought about a moderate increase in postal clerk employment. Competition for permanent positions is very great because of the security offered.

**Trends** - Post Office activities are expected to increase during the next decade as a result of population growth and increased business activities. Additional opportunities will develop for postal clerks, but not in proportion to the increased activity, because of the mechanization of postal facilities and equipment.

**FIELDS AND AREAS OF EMPLOYMENT** - In all post offices throughout the United States, but concentrated in the larger centers of population.

**REMUNERATION** - The beginning salary for substitute clerks is $2.26 per hour. A step increase of 8¢ an hour is given for satisfactory service each year for six successive years, and then every three years for five additional steps until a maximum of $3.14 an hour is reached. The entry salary for regular clerks is $4565 per year. A periodic or step increase of $160 per year is received in recognition of satisfactory service for six successive years, and then every three years for five additional steps until a maximum of $6325 is reached. Clerks working at night are paid extra at the rate of an additional 10% on their basic hourly rate. Extra benefits for substitute and regular employees include 13 days sick leave per year, paid vacations, retirement and survivorship benefits, and optional participation in group life and health insurance programs.

# POST-OFFICE CLERK

## REQUIREMENTS FOR ENTRY

General - Must be a citizen of the United States, at least 18 years of age, pass the federal civil service examination for clerk-carrier. The civil service examination covers the following areas: general intelligence, reading accuracy, and the ability to follow instructions. Are subject to an investigation of moral character and loyalty. Should be pleasant and tactful in dealing with others, present a neat appearance, and have a good memory. Possess good eye-hand coordination and the ability to read rapidly. May have to live in the area served by particular post office. Upon satisfactory completion of a one year probationary period the appointment as clerk becomes permanent.

Education - No formal education or special training is required for employment as a post-office clerk. Most of the applicants who have been appointed in the past few years, however, have been high school graduates. On-the-job training is generally provided by the immediate supervisor or other experienced employees.

Physical - Must pass a physical examination to determine whether they are capable of with-standing the strenuous physical exertion required. Eyesight must be at least 20/30 in one eye. Men must weigh at least 125 lbs. This weight requirement may be waived for those who can pass a strength test. There is no weight requirement for women. Must be able to stretch, lift, walk, stand, and throw for long periods of time, and handle heavy sacks of mail.

AVENUES OF PROMOTION - Workers entering this field begin as substitutes. Upon attaining regular status the employee may be promoted from this position to a postal clerk job at a higher level, scheme examiner, mail dispatch expediter, foreman, or other preferred assignment. Opportunities for promotion are more prevalent for clerks than for carriers, but still very limited. Merit is the controlling factor in advancement to higher positions. Qualifications necessary for promotion may include experience, training or education, aptitude, work performance, and personal characteristics. All clerks are required to pass periodic scheme examinations on the work for which they are responsible.

SOURCKS OF ADDITIONAL INFORMATION - Write or contact: your local post office; U.S. Civil Service Commission, Post Office and Courthouse Building, 5th and Walnut Streets, Cincinnati 2, Ohio; local office of the Ohio State Employment Service. Read: Post Office Occupations, Occupational Outlook Handbook, Bulletin No. 1300, United States Department of Labor, Washington 25, D. C.

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
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## POULTRY HUSBANDMAN
040.081-062

Revised
Dec.
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - May be engaged in any one of a number of activities involving research into the breeding, feeding, and management of poultry flocks. Manages poultry farm for large scale production of market or hatching eggs, and hatchery chicks. Applies statistical or physiological genetics principles for large breeding farms. Compiles nutrition formulae and maintains quality control for feed manufacturing companies. Does sales and service work for feed companies, biological supply houses, and equipment manufacturers. Devises new methods of the preservation and use of eggs, poultry meat, and inedible by-products. May also utilize his knowledge and research techniques for the marketing of egg and poultry products through independent corporations, cooperatives, and chain stores; for educational and research work at educational institutions, experiment stations, and private corporations dealing with poultry; and for agricultural journalism and advertising involving poultry products.

**OPPORTUNITIES**

**Current** - Far more positions available than qualified people to fill them. Largest numbers of openings exist in agriculture-related business enterprises, or farm management in poultry integrated corporations; in sales and service work for feed companies, biological supply firms, and equipment manufacturerers; and in poultry technology work in educational and research institutions and food manufacturing plants.

**Trends** - Toward larger production units, greater integration, and more prepared foods, all of which require more technically trained people.

**For women** - Opportunities are particularly good in research institutions, biological supply houses, and food manufacturing plants, for research workers and technicians.

**FIELDS OF EMPLOYMENT** - Poultry farms, feed manufacturing companies, biological supply houses, poultry raising equipment manufacturers, food processors, supermarket chains, educational institutions, Federal and State Government agencies, and farm journals or other publications dealing with poultry.

**AREAS OF EMPLOYMENT** - Nationwide with emphasis on agricultrual areas.

**REMUNERATION** - College graduates with a B.S. in agriculture who have specialized in poultry science generally start at $4500 to $5500 a year. Those with an M.S. degree start at $5000-$6000, and those with a Ph.D. at $6500-

$7500. Top executive positions pay $10,000 and up. Better beginning salaries are anticipated because the supply of qualified people will probably not meet the demand in the near future.

ENTRY METHODS AND REQUIREMENTS - Background of farm living is considered helpful. Graduation from high school is necessity with emphasis on biological sciences, mathematics, chemistry, and physics preferred.

Higher education - A college degree with specialization not only in agriculture and poultry science, but also in some special area of the latter such as genetics, nutrition, marketing, or poultry products technology is necessary for the most responsible and the highest paying positions.

Students specializing in poultry should choose the agriculture, agriculture industries, agricultural science, or food technology curriculum, depending on field of interest. The agricultural curriculum prepares for farm management; for commercial production of eggs, chicks, broilers or turkeys, and for sales and service work. The agricultural industries curriculum prepares for agri-business training for farm management and marketing of poultry products. The agricultural science curriculum provides basic training for graduate work. An advanced degree is highly desirable for those expecting to teach or do research work. The food technology curriculum prepares for training in preservation, processing, and the development of new uses for food products.

Financial assistance for students in need who have a good academic record is available through scholarships and part-time employment at Ohio State University's College of Agriculture.

School location - Ohio State University in Columbus has the only approved poultry husbandry curriculum in the State of Ohio.

WORKING CONDITIONS - May work long and irregular hours. Often works alone. Usually surroundings are clean.

AVENUES OF PROMOTION - May be promoted to executive positions.

FOR ADDITIONAL INFORMATION - Write or contact the Department of Poultry Science, College of Agriculture, Ohio State University, 674 West Lane Avenue, Columbus, Ohio.;U.S. Civil Service Commission, Washington 25, D.C.; U.S. Department of Agriculture, Washington 25, D.C.

NOTES - (Local information, additions, etc.)

# EMPLOYMENT INFORMATION SERIES

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by the
Counseling Section
Ohio State Employment Service

PRESSER,
MACHINE
363.782-018

Revised
May
1960

## OCCUPATIONAL RELEASE (Silk or wool finisher)

**NATURE OF THE WORK** - The silk or wool finisher restores dry-cleaned and wet-cleaned garments to their new appearance by use of various types of finishing equipment. Steam is used to soften the fabric, remove the wrinkles, and restore the original shape and style of the garment. This is done by using presses of various sizes and shapes in combination with electric and hand steam irons.

**OPPORTUNITIES**

**Current** - There are no sharp shortages or oversupplies reported in this occupation at the present time.

**Trends** - The dry cleaning industry will share in the increased business caused by the rising population. However, no sharp deviation from the current picture is anticipated.

**FIELDS OF EMPLOYMENT** - Centrally located dry cleaning plants or retail shops maintaining their own cleaning equipment.

**AREAS OF EMPLOYMENT** - Opportunities are most numerous in large population centers.

**REMUNERATION** - Piece work basis. Can average from $4500 to $7000 a year.

**METHOD AND REQUIREMENTS FOR ENTRY** - The ability to make decisions, the ability to concentrate, good eyesight and manipulative dexterity are important assets. Educational courses that are helpful include textiles and clothing construction. Most finishers receive on-the-job training lasting six months to one year. (One Ohio dry cleaner says he can determine whether a finisher is fitted for his job inside of one month--and that if he is, he should be fully trained inside of six months.) Training is also available at the National Institute of Dry Cleaning, Silver Spring, Maryland, for members of this association and their employees. Prerequisites include one or more years of practical experience and that the trainee be 18 years of age or more.

**For women** - Men are preferred for wool finishing in some retail shops where the work is visible to the customer, for the sake of appearances. Although some women are just as well qualified as men in this occupation, operating wool finishing equipment looks like a heavy job. Many women are employed as finishers of non-wool fabrics.

# PRESSER, MACHINE

**For non-white** - Opportunities are very good for entry into this occupation.

**Union membership** - Pressers are not organized completely in Ohio. Those who have union affiliations belong to either the International Association of Cleaners and Dye House Workers or the Amalgamated Clothing Workers of America.

**WORKING CONDITIONS** - Conditions are necessarily hot and steamy. Working while standing all day is necessary. Danger of burns from equipment. Peak work load periods occur in the Spring and Fall.

**ADDITIONAL INFORMATION** - Local dry cleaning establishments or write to the National Institute of Dry Cleaning, Silver Spring, Maryland.

**NOTES** - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service

## PRINTING INDUSTRY

Revised
April
1960

## INDUSTRIAL RELEASE

NATURE OF THE INDUSTRY - Basically, printing is a means of transferring ink impressions of type, photographs, and illustrations from a press plate to paper, metal or other materials. The more than 32,000 printing and publishing establishments employed about 265,000 printing craftsmen in 1958. An additional 55,000 were employed by government agencies and business establishments doing their own commercial printing, such as paper box manufacturers. Three printing processes are in general use today--letterpress, lithography (offset printing), and gravure. A fourth method, the screen process, is increasing in importance... In letterpress (relief) printing, the letters and designs to be produced are raised above the nonprinting areas of the press plate.Letterpress is the oldest and by far the most common printing process. Practically all newspapers, the bulk of books, magazines, and a substantial portion of other printed items are produced by this method. The letterpress process also includes photoengraving, stereotyping and electrotyping... The press plate used in lithography is smooth, with both the image and nonimage areas on the same level. Lithography is based on the principal that grease and water repel each other. The image areas of the plate are coated with a greasy substance to which the greasy printing ink will stick. On the press, before each inking, the plate is moistened with water, so that only the image areas take up the greasy ink from the inking roller. In modern lithography, the plates are produced photomechanically, and the method is often referred to as photolithography. Lithography is predominantly used for calendars, maps, posters, advertising material, and printing on metal.This phase of the industry is relatively new and has had a large growth in the past 15 years... Gravure or intaglio printing is much less widely used than either the letterpress or lithographic method. The relative position of the printing and nonprinting areas of the plate is the reverse of that in letterpress. The letters and designs are etched into the plate. Sunday newspaper supplements and mail-order catalogs are well-known examples... In screen printing paint is forced by a rubber squeegee through screen mesh stretched over a printing frame; leaving a design on the surface being printed. Design is controlled by a stencil or pattern.

OCCUPATIONS WITHIN THE INDUSTRY - Composing room: hand compositors, typesetting machine operators, Monotype keyboard operators, Monotype caster operators, Teletypesetters, photocompositors, and proofreaders. Lithographic Craftsmen: platemakers, artists and letterers, cameramen, cutters and offset pressmen. Pressroom: letterpress and gravure pressman. Also, bookbinders, photoengravers, electrotypers and stereotypers. Many other skilled workers in maintenance occupations.

OPPORTUNITIES - There will be many opportunities for young men to enter the skilled printing trades in the 1960's because of moderate growth in employment and the need for replacing workers who retire, die or transfer. Although production of printed materials will expand to meet the population increase, technological developments will keep employment from increasing at as high a rate as production. Composing room employment should increase moderately, while the largest increase will occur in pressman and lithographic occupations.

**FIELDS OF EMPLOYMENT** - "Job" (commercial) shops provide the largest number of jobs, producing such printed matter as letterheads, business forms, advertising matter, folders and pamphlets. Most job shops also have lithographic (offset) departments. Newspapers provide the second largest employment field, from large city operations employing several hundred craftsmen to smaller dailies and weeklies employing less than 15 skilled workers... Lithographic plants provide the third largest field, producing items similiar to commercial letterpress plants, but by a different method... Binderies which assemble printed materials into books, folders, magazines, and pamphlets also provide many jobs for craftsmen.

**AREAS OF EMPLOYMENT** - Throughout the country. Almost every small town has a printing shop of some kind. Ohio is one of 5 states employing more than half of the nation's printing craftsmen. Cleveland is a leading printing center. Job and periodical printing is highly concentrated in major urban areas.

**REMUNERATION** - Earnings in the printing and publishing industry are among the highest in manufacturing industries. In April, 1959 production workers (including semiskilled and unskilled workers in addition to printing craftsmen) averaged $101.73 a week or $2.67 an hour. Apprentices usually start at 40 to 50% of the journeymen's wage in the employer's shop.

**METHOD OF ENTRY** - Apprenticeship is the usual method. In some small shops it is possible to pick up the printing trades by working with printing craftsmen or by a combination of work experience and schooling. About 3000 vocational or high schools offer courses in printing. These courses may materially help a young person to be selected as an apprentice.Apprentices are often chosen from among the young men already employed in various unskilled jobs in printing establishments. Prior civilian or military experience in the field may lead to advanced status.

**REQUIREMENTS FOR ENTRY** - To be eligible for apprenticeship, applicants are generally required to be between 18 and 30 years of age and be able to pass a physical examination. Most employers require a high school education or its equivalent. A thorough knowledge of spelling, punctuation and grammar is essential for some of the printing trades. Courses in art, such as drawing, design, color and lettering, as well as courses in physics and chemistry, are also helpful for many kinds of printing work.

**WORKING CONDITIONS** - A standard workweek of 37½ hours was specified in labor management contracts covering a majority of the organized printing trades workers in 1958, although standard workweeks of 36¼ hours were also common.

**Unions** - The two largest are the International Typographical Union and the International Printing Pressmen and Assistants' Union of North America. Others include the International Photoengravers Union of North America, International Stereotypers' and Electrotypers' Union of North America, and International Brotherhood of Bookbinders. The majority of lithographic workers are in plants under contract with the Amalgamated Lithographers of America (Ind.) a union which organizes on a plant-wide basis.

**SOURCES OF ADDITIONAL INFORMATION** - Local printing establishments, local unions, local union-employer apprenticeship committees, Ohio State Employment Service office.

**NOTES** - (Local opportunities, wages, etc.)

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: January 1968

## PROGRAMMER, BUSINESS
## 020.188

NATURE OF THE WORK A business programmer prepares instructions for the electronic computer. He carefully analyzes every "problem" processed in a computer so that exact and logical steps for its solution can be worked out. In some cases, this preliminary work is done by an experienced programmer; in others, it may be done by a specialist known as a systems analyst (012.168). Once this preliminary work has been completed, the detailed instructions for processing the data can be prepared by the programmer.

In business offices where computers are frequently used to bill customers, make up payrolls, and keep track of inventories, the programmer first determines which facts must be used to prepare documents such as customers' bills or employees' paychecks. Next he records the exact form in which these facts are entered on company records. He then makes a flow chart or diagram showing the order in which the computer must perform each operation, for which he prepares detailed instructions. The programmer is also responsible for preparing an instruction sheet for the console operator to follow when the program is run on the computer.

The final step in programming is "debugging" - checking that instructions have been correctly written and will produce the desired information. The programmer may assist in determining causes of machine malfunction and in program revision.

EMPLOYMENT OUTLOOK In the next decade, many thousands of new jobs for programmers will become available each year. Employment is expected to increase rapidly as technological changes render computers increasingly useful to business and government, especially in processing business records and in controlling manufacturing processes, and as the number of computer installations increases. Women as well as men will find good opportunities in this field.

FIELDS OF EMPLOYMENT Programmers find employment in large business organizations, government agencies, insurance companies and banks, public utilities, wholesale and retail establishments, manufacturing firms, and in educational institutions.

REMUNERATION The average salary for beginning programmers is about $5500 per year and about $8500 to $9500 for experienced programmers. Evening or weekend work may be necessary, although daytime hours are most common. Salary varies according to education and training, size of business, duties performed, and the length of employment with any one company.

## REQUIREMENTS FOR ENTRY

General A person interested in becoming a programmer should be a logical thinker and have an aptitude for the exacting kind of analysis which the job requires. A programmer should be patient, persistent, and extremely accurate. He often needs to use ingenuity and imagination in establishing a successful program.

Education and Training Programmers doing scientific and engineering work are usually college graduates with degrees in physical sciences, engineering, or mathematics. Employers who use computers to process business records generally place somewhat less emphasis on technical college training, previous work experience often serving equal importance. Preference is often given, however, to applicants with education beyond high school.

Prospective programmers can acquire some of the necessary skills at an increasing number of technical schools, colleges, and universities offering formal instruction. Instruction ranges from home study to advanced work in computer technology at the graduate level. Instruction at the high school and post high school levels is available in many parts of the country but does not entirely eliminate the need for on-the-job training. Since technological changes are continually taking place in this field and each type of computer has its own special programming requirements, some additional training is often necessary even for experienced programmers who change from one job to another.

WORKING CONDITIONS A programmer usually works from 35 to 40 hours per week. Occasional evening or weekend work is required while correcting program errors or determining causes of machine malfunctions. Programmers usually work in well-lighted, air-conditioned, modern offices.

AVENUES OF PROMOTION Most employees enter the occupation as programmer trainees and advance to journeyman programmers or projects programmers after a year or more of experience and training. With additional experience they may progress to programmer chief, systems analyst, or to other supervisory positions in computer administration.

SOURCES OF ADDITIONAL INFORMATION Contact: Data Processing Management Association, 524 Busse Highway, Park Ridge, Illinois, 60068.

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Ohio Bureau of Employment Services
145 South Front Street
Columbus, Ohio 43216

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed
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## PSYCHOLOGIST

045.088, 045.108,
all suffixes

Revise
Nov.
1960

## OCCUPATIONAL RELEASE

NATURE OF WORK - Studies behavior of people, develops tests which measure aptitudes and personality, and uses test results and other techniques as aids in understanding individuals. May engage in such varied activities as teaching in colleges and universities, diagnosing and treating mental disorders, counseling individuals, assisting in selecting workers for jobs, and conducting research.

Is in one of two major groups--specialist in applied field working directly with people; or specialist in research or college or university teaching.

The clinical psychologist works in mental hospitals or clinics and is concerned primarily with problems of maladjusted or disturbed people. Conducts interviews, gives diagnostic tests, and provides individual or group psychotherapy.

The counseling or guidance specialist helps students, the physically handicapped, and other individuals achieve educational, vocational, and social adjustment.

The school psychologist administers intelligence and diagnostic tests to children, interprets the results, and suggests remedial action when necessary.

In other applied fields such as industrial, personnel, human engineering, and educational psychology, may act as a management consultant, selecter and trainer of personnel; may assist in designing equipment for the most efficient utilization of personnel, or develop improved teaching methods.

Specialists in basic science fields conduct research in colleges, universities, mental hospitals, government agencies, and a variety of other organizations. Examples of research problems in developmental, experimental, comparative and social psychology--relation of age to learning ability, brain function under conditions of extreme fatigue, how living conditions affect animal and human behavior, how attitudes change as a result of group living, etc.

OPPORTUNITIES

Current - Nationally, expected to grow substantially during the 1960's. Strong demand for those with Ph.D. degrees in every field or specialization and in most parts of the country. Considerable demand for those with master's degrees but opportunities for full professional employment are more limited. The doctorate is generally required for independent practice and the more responsible salaried positions.

Trends - Continued rapid expansion of this profession in the foreseeable future is based on population expansion; increasing recognition by schools, government agencies, private industry, and the public; growing concern about mental health needs resulting in a tremendous increase in State funds available for treatment; and the Federal Government's major sponsorship of psychological research.

For women - Mostly in clinical psychology. School counseling and guidance programs will offer increased opportunities as will colleges and industry.

FIELDS OF EMPLOYMENT - Nationally, more than one-third are employed by colleges and universities.Government agencies employ the second largest group. Sizeable groups are also found in elementary and secondary schools,private industry,and non-profit foundations, hospitals and clinics.Private practice is also a growing field.

AREAS OF EMPLOYMENT - Large cities, university towns, mental health institutions located in rural areas.

REMUNERATION - In late 1960, beginning salaries averaged between $4500 and $5500 annually for psychologists with master's degrees and between $6000 and $7000 annually for Ph.D.'s with no experience. Federal Government and industrial salaries for Ph.D.'s with limited experience were starting at $8500.

METHODS AND REQUIREMENTS OF ENTRY - The master's degree requires a minimum of one year full-time graduate study. Clinical and counseling psychology master's degrees require a minimum of two years in those schools which include practical training in the master's degree program.

The Ph.D. degree requires a minimum of three or four years of graduate work--and usually 4 to 5 years including one year of internship or supervised experience in the case of clinical and counseling psychology. Most universities have more applicants for graduate study in psychology than can be accepted.

Advanced training is most commonly obtained in graduate departments of psychology.

Undergraduate courses - Basic psychology courses, supplemented by the biological and physical sciences, statistics, and mathematics, are the most frequent requirements.

Selection factors - College grades and performance on aptitude test.Emotional stability, interest in people, and social maturity are considered important for those entering the applied fields.

ADDITIONAL INFORMATION - Local colleges and universities; American Psychological Association, 1333 16th St. N.W., Washington 6, D.C.

NOTES - (Local opportunities, etc.)

# EMPLOYMENT
# INFORMATION
# SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

## PUBLIC RELATIONS MAN

165.068-018

Revised
Feb.
1961

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - In corporate public relations, keeps management informed of changes in the openings of its (management's) various publics--stockholders, employees, customers, suppliers, and government. Also counsels management as to the impact its action of lack of action will have on the opinions of these publics. Once a corporate decision has been made, communicates this information in the best and most favorable manner to the company's publics. (In organizations other than corporations, usually acts in a smiliar manner in regard to his employing organization and its publics.)

Develops and maintains good relations with representatives of various communications media in order to gain maximum attention to the material he sends them. May also use means of communication such as posters,pamphlets, displays, movies, speeches, company house organs, or even company annual reports. May also have a hand in formulating and executing the company's advertising policy.

Prepares publicity for release to various media in the style of the individual medium, including newspapers, magazines, radio and television station. In addition to written material may provide photographs to newspapers and magazines and slides and film to television stations. May also work up special features or programs in addition to day-to-day releases, or may alert media to possible stories about his organization which they may wish to develop themselves.

May be a specialist in some field such as finance, technical article writing,or legislation.

OPPORTUNITIES

Current - Listed as a demand occupation by the U.S. Department of Labor.

Trends - The growing size and complexity of many organizations and the increased desire for favorable public opinion in the business community at large, because of its effect on product sales, employee productivity, and labor and governmental relations, should increase the need for qualified public relations men to clarify policies and other information at the public level.

FIELDS OF EMPLOYMENT - Business and industry, Federal, State, and city government; fund-raising organizations, professional, trade, or union associations; colleges and universities;public relations and advertising agencies;promotion departments of newspaper,radio and television stations,self employment as a public relations consultant.

AREAS OF EMPLOYMENT - Most numerous in large metoropolitan centers.

REMUNERATION - In Ohio, most salaries fall between $4000 and $10,000 annually.More in exceptional cases.

# PUBLIC RELATIONS MAN

ENTRY METHODS AND REQUIREMENTS - In the past, entry has been gained frequently from newspapers. Also, company personnel who have carried some small public relations duties have taken charge of full-scale programs as they developed. Some entrants have worked in other communications medica, or advertising agencies. Of late, some entrants have come from company legal and personnel departments, and the academic ranks.

The student planning a career in public relations should concentrate on English, public speaking, and social sciences in high school. Four years of college are generally required, although journalism experience may be substituted. College emphasis should be on public relations with supplementary courses such as journalism, English, radio and television writing and production, speech, advertising, and photography.

Selection factors include being a capable writer, an effective speaker, having knowledge of all communications media, and good judgment. Should have a desire to be of service to others, a creative mind, and a pleasing personality. Should be able to able to develop human relationships successfully and have a stable, aggessive temperament plus initiative. In certain cases, special knowledges are required, although these generally can be acquired on the job.

WORKING CONDITIONS - Indoor office work. May work long, irregular hours. May work under considerable pressure. Must meet deadlines of various media.

AVENUES OF PROMOTION - Generally starts as a publicity assistant, researcher, or writer. Advancement is dependent on experience and demonstrated ability. Top post is ordinarily that of public relations director.

ADDITIONAL INFORMATION - "Opportunities in Public Relations", Henkin, Shepherd; Vocational Guidance Manuals, 1951; "Public Relations Men", Careers, 1957, 25¢ "Want to be in Public Relations?", Public Relations Society of America, 1956. "Public Relations Today", Business Week, July 2, 1960.

NOTES - (Local wages, opportunities, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
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PURCHASING
AGENT
162.158-102

Revised
July
1963

## OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - Buys the raw materials, equipment, machinery, supplies, and services necessary for the operation of their organization. Obtains the most suitable materials in the proper quantity, at the most reasonable cost, for delivery at the right time and place. Must consider the following factirs in selecting the agent or agency offering the best merchandise for their purpose: specifications, cost, quantity discounts, freight handling or other transportation cost, and delivery time. Will obtain information by comparing listings in catalogues and trade journals; interviewing and discussing items with various supplier representatives; keeping abreast of current market trends; and observing demonstrations of equipment. May visit the plants of company suppliers to see how products are manufactured and to check on their quality. Negotiates contracts and specifications or approves those drawn up by assistants or technical staff. Keeps complete and accurate material control records of goods purchased. May control authorization for payment of materials received. May direct the work of a staff. May be assigned to such specialized areas as equipment, raw materials, packaging materials, office supplies, etc.

**OPPORTUNITIES**

**Current** - Opportunities are good as a result of the development of new positions in rapidly expanding companies, and the need to replace personnel who retire, die or transfer to other jobs. Graduates of schools of business administration, having courses in purchasing, are expected to continue to be in demand by employers. The demand for graduates with a good background in engineering and science will be above average in firms manufacturing complex machinery, chemicals, and other products of a technical nature.

**Trends** - It is anticipated that the opportunities for purchasing agents and their assistants will continue to increase during the 1960's. The principal factors influencing this outlook will be the growth of business and manufacturing firms, development of new products, new sources of supply, and the increasing complexity and specialization of business functions. Management is recognizing the importance of the purchasing function due to the current competition among manufacturers for new, improved, and less costly raw materials, goods, and services.

For Women - Fewer than 10% of all purchasing agents are women. Government agencies, hospitals, restaurants, and textile firms are the principal employers of women purchasing agents.

**FIELDS AND AREAS OF EMPLOYMENT** - Purchasing agents and assistants are employed by manufacturing industries, government agencies, wholesale and retail trades, public utilities, transportation companies, and institutions; such as, schools, colleges, universities, and hospitals. In 1960 over half of the purchasing personnel were employed by manufacturing industries. The greatest concentration of purchasing agents occurs in metropolitan areas and manufacturing centers.

REMUNERATION - The beginning salary for college graduates hired as purchasing agent trainees ranges between $6,000 to $6,300 a year. Experienced purchasing agents receive an annual salary ranging from $8,500 to $20,000 depending upon individual ability, longevity, and supervisory responsibilities. Some purchasing executives earn salaries of $25,000 or more. Federal civil service employees receive any place from $4,110 as procurement clerks to $14,565 as supervisory procurement officers. Purchasing personnel usually receive the same holidays, vacations, and benefits as other company employees. Those who travel in connection with their jobs are usually reimbursed for lodging, transportation, and other costs.

REQUIREMENTS FOR ENTRY

General - The following personal characteristics are invaluable assets for success in this vocation: integrity, dependability, initiative, industriousness, tact,and cooperativeness. Should possess an inquiring mind, analytical ability, ethical standards, skill in human relations,the desire and potential for learning, and the ability to work on details.

Education - Persons with a high school education and experience in procurement can and will continue to obtain jobs in purchasing departments; however, opportunities for advancement to supervisory purchasing positions will tend to decrease. A college education is becoming increasingly important, with a degree in business administration or engineering preferred by some employers. It is recommended that the following courses be included in a course of study: general economics, accounting principles, business communications, commercial law, statistics, business organization and management, marketing principles, corporation finance, industrial purchasing, marketing research, sales forecasting, price policies, traffic management, cost accounting, production planning and control.

Training - Most companies offer training programs for members of the purchasing department. May provide classroom as well as on-the-job training. Some training programs may be offered by extension divisions of universities, by purchasing agents association, and by management associations.

AVENUES OF PROMOTION - Will usually enter the field as trainees or purchasing clerks. Those individuals possessing integrity, a sense of responsibility, good judgment, and experience in the various aspects of purchasing may be promoted to assistant purchasing agent - purchasing agent - head of the purchasing department. May become vice president with the responsibility for purchasing, warehousing, traffic, and related functions.

FOR ADDITIONAL INFORMATION - Write or contact: local personnel managers or directors of industries, hospitals, etc.; local office of the Ohio State Employment Service; National Association of Purchasing Agents, 11 Park Pl., New York 7, N.Y.

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
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Ohio State Employment Service

## RADIO
## (TELEVISION)
## ANNOUNCER
## 159.148-010

Revised
April
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Radio and television announcers announce news, commercial and public service messages, identify stations, describe sporting events, and introduce programs. In small stations, may perform additional duties such as operating the control board or selling time. Staff announcers in large stations have more specialized duties limited to the programming department. In addition to announcing, may act as masters of ceremonies, conduct interviews, and participate in other ways in locally originated shows. Many announcers act as "disc jockeys", introducing selections of recorded music and other matters of interest to the audience. Disc jockeys must "ad lib" much of their commentary, working without a detailed script.

In addition to staff announcers, an estimated 10,000-15,000 "free lance" announcer specialists sell their services for a fixed period on a contract basis to networks, stations, advertising agencies, and other independent producers for both programs (news, sports, disc jockey, etc.) and commercials.

**OPPORTUNITIES** - A moderate increase in employment is expected during the 1960's as a result of an additional 1,000 radio stations and 50-100 television stations going on the air. This growth plus replacement needs should create an average of 400-500 openings annually on a national basis. Beginning jobs in radio stations, especially the smaller ones, will be easier to obtain because of their greater numbers. The great attraction of this field and its relatively small size will result in keen competition for available jobs.

**For Women** - Jobs limited to special "talent" for the most part--for specific commercials or women's programs.

**FIELDS OF EMPLOYMENT** - Commercial and educational radio and TV stations.

**AREAS OF EMPLOYMENT** - Almost every community with a population of over 8,000 has at least 1 broadcasting station, and a few of the largest cities have more than 20.

**REMUNERATION** - In 1958 most announcers in small stations earned from $60 to $75 per week. In medium-sized stations, earnings generally ranged from $80-$110 per week. Many experienced announcers in large metropolitan stations earned more than $150 per week. Many of the better-paid announcers receive a large part of their income from talent fees. In medium and large communities, some specialists earn much more than $10,000 a year.

**METHOD OF ENTRY** - Many announcers get their first broadcasting jobs in small stations, where they are frequently required to perform a number of other program duties, such as writing script and news copy. Announcers in small and medium sized stations sometimes handle work outside the program department, such as operating controls or selling time. For this reason, prospective announcers often obtain a FCC Radio Telephone Operator License First Class, which makes them legally able to operate the transmitter and, therefore, much more valuable to these stations. In large stations, it is sometimes possible for young persons to start out as clerks, messengers, or page boys and gradually work into announcing jobs. A number of schools offer training in radio and television announcing.

Because of the time-consuming schedules that many radio and television program directors or chief announcers follow, most of them prefer that application first be made by letter, with an accompanying photo. Work and educational history should be included, easy to check references, and phone numbers and addresses where applicant can be reached. A follow up telephone call or letter by the applicant is in order. If not accepted in an interview or through an audition, but told he has promise, he should keep in touch with the station through the mail. In the radio and television business, openings may occur suddenly, and the pressure to fill those openings many times means that immediate availability as well as qualifications can be a determining factor in getting a job.

**REQUIREMENTS FOR ENTRY** - Personal characteristics are very important in announcing. To succeed in radio, one must have a pleasant, well-controlled voice; in television, rather high standards of personal appearance must also be met. Because of the ever changing nature of the work, an announcer must be able to think fast and handle unusual situations effectively. An announcer must have a thorough knowledge of English grammar and usage. A broad educational background is also very helpful. Any connection previously with direct sales is an asset for a commercial announcer.

**Unions** - Most active in the network centers and large stations. Many announcers and entertainers are members of the American Federation of Television and Radio Artists.

**WORKING CONDITIONS** - Announcers often work evenings, night, and weekends. Their work hours consist of both time on the air and time spent in preparing broadcasts, and vary from job to job. Working conditions are generally very pleasant owing to the variety of work and the many personal contacts which are part of the job. Announcers also receive some satisfaction from having their names become well known in the community.

**AVENUES OF PROMOTION** - Many announcers work in several different stations in the course of their careers. After acquiring experience in a small station, an ambitious and talented announcer may move to a better paying job with a larger station. He may then improve his status by working into a regular program as a disc jockey, sportscaster, or other specialist. Some of the more successful announcers become well-known and highly paid personalities in the large stations.

Some announcers may become program directors or salesmen--a more likely possibility for those remaining at the same station in a small locality.

**SOURCES FOR ADDITIONAL INFORMATION** - Local radio and television stations, *Broadcasting* magazine, (which also lists help-wanted ads), *Sponsor* magazine, *Radio Annual, Television Yearbook*, which lists all United States stations, and their facilities.

**NOTES** - (local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
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RADIO
TELEVISION
INDUSTRY

## INDUSTRIAL RELEASE

NATURE OF THE INDUSTRY - Most broadcasting stations are independently owned. Many are affiliated with networks which supply programs to individual stations on the basis of contracts which provide for payment by the network for the use of the station's time. Radio stations are served by 4 nationwide networks, and more than 80 regional and area networks. Three nationwide television networks provide program service to affiliated commercial stations. Television stations cost more to operate than radio stations, and only a limited number of television channels are available, so many small cities have only one or two television stations.

In 1958, radio stations averaged 20 employees, and television stations, 60. Job duties and work organization vary greatly from the smallest to the largest stations.

The usual small station format consists of transcribed music, weather and news announcements, plus network shows if it is an affiliate. Generally, a few workers perform a variety of tasks -- the station manager who may be the owner may also act as business and sales manager, program director, announcer, and script writer. Small station announcers usually do their own writing, often operate the studio control board, and may act as salesmen. The engineering staff may consist of only one full-time broadcast technician assisted by workers from other departments on a part-time basis. In large stations, jobs are much more specialized and are usually confined to one of four departments.

OCCUPATIONS WITHIN THE INDUSTRY - Programming: Program director supervises programming policies and personnel carrying them out. Production director supervises production policies, and directors, who plan and direct on-air programs. Announcers deliver commercial and other announcements. Operations director (commerical coordinator) keeps track of incoming and outgoing commercial materials and supplies traffic personnel with "rundowns", codes indicating type and origin of audio and video portions. The codes are incorporated into the program "log" or schedule listing the order of programs and commercials.

Photographers, artists, and continuity writers supply audio and video materials. (Photographer -- newsmen cover events, recording them on film.) Film editors cut and splice film to fit time, dramatic, and commerical requirements. Props men arrange sets for live studio action, and among them are floor directors who assist director in setting up details of sets, and place on-camera personnel and cue their actions. A carpenter on the props crew builds and repairs sets. Special talent beyond the station's announcing staff is generally used for particular programs and announcements. Promotion personnel publicize the station's programs; public service personnel select and process public service announcements and programs, see that the station fulfills its license agreement in allotment of public service time, and see that ethical practices are being observed.

Engineering: Broadcast technicians perform a variety of jobs -- setting up operating and maintaining electronic equipment under supervision of the Chief Engineer.

Sales: Merchandising personnel promote and publicize station-advertised products.

Time Salesmen sell time on the air to sponsors, advertising agencies, and other buyers. In doing so they must have a thorough knowledge of the station's operations and the characteristics of the area it serves, such as population, number of radio and television sets in use, income levels, and consumption patterns.

Business Management: May include accountants, lawyers, personnel workers, stenographers, typists, bookkeepers, clerks and messengers.

## OPPORTUNITIES

Current - No employment increase foreseen; some slight decline possible in existing radio stations; replacement needs create approximately 1000 openings annually.

Trends - 1960's will see the addition of approximately 1000 radio stations and 50 - 100 television stations, (under existing FCC regulations), mostly small requiring few additional personnel. Factors limiting employment will come from greater emphasis on "filmed" presentation, magnetic videotape, and automatic programming. (Only one broadcasting station is currently "automated" in Ohiio.) Color television will have little total effect on employment.

For women - Considerable opportunity in entry jobs. Good talent opportunity. Little acceptance in announcing, directing, photography, sales. Pay likely to be lower for women in equal occupations to men except in talent.

FIELDS OF EMPLOYMENT - Commercial and educational radio and television stations.

AREAS OF EMPLOYMENT - Nationwide and Statewide.

REMUNERATION - Earnings range from $40. a week for beginning clerical workers in small stations to more than $10,000 a year for established and highly skilled announcers, engineers, directors and time salesmen in large stations.

METHOD AND REQUIREMENTS FOR ENTRY - Most skilled jobs are held by persons who started in low-level entry jobs, acquired knowledge and skills over a period of time, and moved up. Small stations usually require high school graduates, and prefer some college education. Some technical schools offer radio and television courses -- many colleges offer courses in this subject. Specialized training or previous experience is not generally required, with the exception of technician jobs, for which the applicant should have a Radio Telephone Operator License First Class. Gneerally, large stations fill most job openings by upgrading entry-job holders.

Unions - Many unions operate in the broadcasting field. They are most active in the network centers and large stations.

ADDITIONAL INFORMATION - Local stations, Radio Annual, Television Yearbook, Broadcasting-Telecasting, and Sponsor magazines.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service

## REAL ESTATE

BROKER
250.358-026
SALESMAN
250.358-026

Revised
Nov.
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Act as agents between owners and buyers of home and other property. Salesmen are employed by brokers mainly to show and sell real estate. Brokers are independent business men who not only sell real estate but may also rent and manage properties, appraise their value, make or arrange for the loans necessary to finance sales, and develop new building projects. May also have such responsibilities as managing an office, hiring employees, advertising property, and maintaining the contacts necessary in the business.

The majority of real estate salesmen and brokers sell homes, with some specializing in selling either low-price or expensive homes. A few handle costly commercial properties, such as multimillion dollar hotels and giant office buildings. Others deal chiefly with farms and other land.

Salesmen present selling points to customers, generally meeting prospect several times since the investment is so considerable as to require careful consideration. Location in regard to availability of schools and shopping facilities may play an important part--floor plan, soundness of construction, and financing arrangements are other considerations.

In selling commercial property, may discuss how the property can be used, zoning restrictions, tax rates, and insurance needs. Attempts to match buyer's needs and preferences to his ability to pay. When bargaining is necessary, works toward getting the best possible price while still making the sale. In closing stages of sale, often arranges for loan, a title search, and a meeting at which owner finally take possession of property.

Does some office work--checking listings of properties for sale or rent, and phoning prospective clients. May also answer telephone inquiries about properties, arrange appointments to show real estate, make out reports of activities, and keep records on properties sold.

**OPPORTUNITIES**

**Current** - Many opportunities to enter the field during the 1960's, but there are certain limiting factors.Competition for sales is keen. Those having a real aptitude for selling and the ability to finance themselves when business is slow should find many opportunities. Mature men are most in demand, but women are finding increasing opportunities. Best opportunities for those entering large companies as trainees will go to those with specialized training in real estate and closely related fields; such as appraisal, property development, and management.

A number of openings for college graduates with training in real estate will also arise in banks, insurance companies, and other large firms with specialized real estate departments.

**Trends** - Continuing population growth and the related need for more homes and business establishments should increase opportunities over the long run. Replacement needs should increase since the average age of real estate brokers and salesmen is above the average for workers in the majority of occupations. Real estate selling is likely to remain a highly competitive field, owing to the relative ease with which it can be entered.

**AREAS OF EMPLOYMENT** - Every section of the country. The few big real estate firms are located in large metropolitan areas.

**REMUNERATION** - Commissions on sales are the main source of earnings. The usual commission on the sale of a moderate-priced home today in 1960 is 6%. A $10,000-$12,000 home would yield about $600-$720 commission. Usually, the salesman gets half and the broker or real estate firm the remainder, but this is often negotiated on the basis of shared advertising, quality of listings, etc. Earnings depend greatly on the type of property sold and whether or not specialized work is done. Individual ability, geographic location, and economic conditions are other factors. Earnings for beginning salesmen are irregular.

**METHOD AND REQUIREMENTS OF ENTRY** - Although a specified amount of education is seldom required for real estate salesmen, employers prefer to hire those who have at least a high school education. Aptitudes for selling and dealing with people are essential. Maturity is rated as an important attribute.

Young men and women interested in beginning jobs as real estate salesmen often apply to brokers in their own communities where they can use their knowledge of local neighborhoods to advantage. Usually work under direction of experienced salesman or broker while learning the practical aspects of the business. After a few years of experience, the salesman who becomes a licensed broker may open his own business.

**Licensing** - For Ohio, see Part VI of the Employment Information Series--Licensed Occupations in Ohio.

**Education** - Both experienced agents and beginners can obtain helpful preparation from courses offered by local real estate boards who are members of the National Association of Real Estate Boards. More complex work or specialization makes advanced courses even more important.

**Associations** - A member of the National Association of Real Estate Boards may use the term "realtor" if he meets certain requirements. Qualified people may become members of the American Institute of Real Estate Appraisers, the Institute of Real Estate Management, or the National Institute of Farm Brokers. Such membership indicates recognition in specialized fields.

**WORKING CONDITIONS** - Salesmen are provided with office space by the brokers for whom they work. Are expected to furnish their own automobiles. Those going into business as brokers generally need a modest amount of money to equip a small office and to meet such expenses as rent, advertising, and sometimes salaries of office workers.

**ADDITIONAL INFORMATION** - Local real estate agencies; Department of Education, National Association of Real Estate Boards, 36 South Wabash Avenue, Chicago 3, Illinois; Ohio State Real Estate Examiners Board, 22 East Gay St., Columbus, Ohio.

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## REFRIGERATION SYSTEM INSTALLER
637.281-010

Revised
February
1960

**NATURE OF THE WORK** - The refrigeration and air conditioning mechanic installs, maintains, and repairs refrigeration and air-conditioning equipment used in such places as theaters, food stores, restaurants, homes, factories and office buildings. Installation requires positioning motors, condensers and dehumidifiers in accordance with design specifications. Also assembles and connects piping and refrigerant lines and connects the equipment to electrical controls and checks the voltage entering the motor. After completing installation and connecting recording and gaging devices, mechanic starts the unit and tests it for proper performance and for leaks. Adjusts pumps, dehumidifiers, filters and other components in order to obtain the most efficient performance. On larger installation jobs must read and interpret blueprints or drawings. On smaller installations, may have to prepare his own sketches and do simple layout work such as measuring and cutting. Maintenance work requires lubricating machinery, replenishing refrigerant, adjusting valves and examining other parts of unit to detect leaks and other defects before serious trouble begins. May also make electrical repairs in connection with his work. Uses tools and equipment such as electric drills, soldering torches, flaring tools, benders, hammers, screwdrivers, pliers, welders and testing devices such as leak detectors and test lights.

## OPPORTUNITIES

**Current** - Thousands of additional mechanics are and will be needed because of the growth of the air conditioning and refrigeration business. The mechanic ordinarily works a 40 hour week, but winter time may be slow and irregular and overtime hours may be necessary to maintain income. This condition is less frequent than in former years.

**Trends** - There is no end in sight for the demand for mechanics. Use of refrigeration for preserving foods and other perishables is on the increase. Refrigeration is gaining importance in the manufacture of synthetic rubber, oil, high test gasoline, medicine and drugs. Manufacturers are also increasing the use of air-conditioning for controlling air temperatures and humidity and for removing dust from the air during the production process. The introduction of the heat pump, a combination cooling and heating unit for home and industrial use, is expected to contribute to the growth of this occupation.

**FIELDS OF EMPLOYMENT** - Shops specializing in repair and maintenance of commercial, industrial and home refrigeration; air conditioning manufacturers; contractors and dealers. Maintenance employment in department stores, hotels, restaurant chains, factories. Many mechanics have opened their own shops.

**AREAS OF EMPLOYMENT** - Large cities offer best opportunities.

**WAGES** - In 1959 some repair shops in the United States were paying $2.75 to $3.00 per hour for non-union journeymen working on equipment up to 5 horsepower. Non-union mechanics on 5 horsepower and up, $3.00 and up per hour. While non-union mechanics working for distributors were making $2.00 to $3.00 an hour. Time and a half was being paid for overtime. Union rates were approximately 50 cents per hour higher on all of these rates. Apprentices began at one-half the journeyman rate. Commercial equipment mainteance paid higher than household, even when equipment was the same size.

## ENTRY QUALIFICATIONS

**General** - Mathematical and mechanical ability--ability to understand and work with electricity.

**Education** - High school graduates preferred with courses in mathematics, mechanical drawing and physics. Some technical schools offer training in installation operations, maintenance and repair of all types of refrigeration and air-conditioning equipment. Most companies offer on-the-job training and extra schooling in off-hours.

**Physical** - Great strength not essential but good physical condition important since lifting and moving air-conditioning and refrigeration equipment is frequently necessary. Sometimes required to work at high levels and in awkward or cramped positions.

**Training** - Many mechanics pick up their skill by working as helpers with experienced mechanics. Apprenticeship programs are another method of learning the trade. Programs generally last 4 - 5 years and include both practical experience and classroom instruction. The apprentice is trained in installation and connection of refrigeration equipment, gas lines, liquid lines, air control lines and other kinds of piping. As training progresses he does layout and assembly work and is taught the planning aspects of the trade. Also he is given classroom instruction in mathematics, blueprint reading, compression refrigeration systems, heat transfer and insulation; electrical controls and related equipment.

**Hazards** - Those associated with the handling of heavy equipment and the possibility of torch burns.

**UNIONS** - United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the U. S. and Canada; the International Brotherhood of Electrical Workers; the Sheet Metal Workers' International Association.

**SOURCES** - (Unions, Manufacturers, Technical Schools.)

**NOTES** - (Local pay rates, etc.)

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed
by the
Counseling Section
Ohio State Employment Service**

## OCCUPATIONAL RELEASE

## REPORTER

132.268

Revised
February
1960

NATURE OF THE WORK - Reporters collect information on news events and write news stories for publication in daily or weekly newspapers. They gather information by interviewing people, consulting police and other public records, observing events as they happen, and doing research in libraries. As a rule, reporters take brief notes while collecting facts and type their stories upon return to the office. To meet deadlines they may phone information to other reporters. Big city dailies frequently assign some reporters to special "beats" such as police stations or courts, to cover news originating in these places, while local news which develops elsewhere is handled by general assignment reporters. News on certain subjects such as sports, politics and religion is often dealt with by reporters who have specialized in these fields. Reporters on small newspapers not only cover all aspects of local news, but may also take photographs, write headlines, lay out inside pages, and even write editorials. On the smallest weeklies they may also solicit advertisements, sell subscriptions and perform general office work. Newspaper reporting is only one of several occupations open to young people trained in journalism. Persons with this background may also work for general circulation magazines, trade, business, labor, and other specialized periodicals, for radio and television stations, advertising agencies, and public relations firms; and for government agencies. These related activities are not dealt with in this release.

OPPORTUNITIES

Current - In 1950 an estimated one-half of the 60,000 editors and reporters employed in the printing and publishing industry were newspaper reporters. Although women composed approximately one-third of this combined group, the proportion of newspaper reporters who were women was much smaller. There are 93 daily and 283 weekly newspapers in Ohio at the current time. City dailies provide some opportunities for beginners to start as copy boys with a chance of later advancement to reporting jobs. City newspapers occasionally hire beginners to fill openings, but experienced reporters are usually hired for such positions, and there is considerable competition for reporting jobs in most large cities.

Trends - New openings will chiefly develop from the need to replace reporters receiving promotions to editorial or other higher level positions, transferring to other fields of work, or lost to the profession through death or retirement. Newspaper circulation is likely to grow and the number of pages per paper is likely to increase, but this expansion can be handled by existing staffs in all probability. Furthermore, rising publishing costs have led some newspapers to consolidate with others-reducing the number of working reporters in some cities, and making it necessary for them to relocate for jobs of equal quality. Individuals of sufficient talent can still look forward to breaking into and advancing in the profession.

Women - Some opportunity, mostly in specialized areas such as society, fashion, home making.

FIELDS OF EMPLOYMENT - City dailies, city-sectional, and town weeklies, press services, news syndicates.

WAGES - The American Newspaper Guild minimum wage for beginning reporters in 1959 ranged from $55.00 to $75.00 per week. After four to six years, $106.00 to $140.00 a week, One editor points out that wages are a little lower in smaller cities and in the South. Another states that non-Guild papers often pay more than Guild papers and many reporters exceed minimums.

ENTRY REQUIREMENTS - The ability to write well, to report news accurately and to do both of these under the pressure of deadlines are important for success in this field. Personal qualities include a "nose for news", persistence, initiative, resourcefulness and an accurate memory. Any previous experience gained writing for high school newspapers or other publications may serve to demonstrate the presence of these abilities. Knowledge of typing is necessary. Talented writers with little or no academic training beyond high school will be an exception if they are hired as reporters in the future. An increasing number of newspapers require applicants to have college education. Most newspapers today look to journalism schools as their prime source of talent. Ohio schools offering a degree in journalism can be determined from Part V of the Employment Information Series.

Training - Most beginners become "cub" reporters on weekly or small daily newspapers. Less frequently are they hired on large daily newspapers. Beginning assignments may include summarizing speeches, covering relatively unimportant meetings or interviews, writing obituaries and handling minor news events. With experience, beginners may advance to covering more important developments or be assigned to a "beat" or special subject.

AVENUES FOR PROMOTION - For experienced reporters, advancement is possible to positions such as columnist, correspondent, or editor. Progress can also be made by moving to jobs with larger papers or with press services and newspaper syndicates. Some reporters eventually advance to top executive positions or become publishers. Others transfer to related fields such as advertising, radio, television, or public relations.

WORKING CONDITIONS - Irregular hours geared to newspaper publication deadline and news occurrence. Large city papers pay overtime for more than 40 hours, vacations, group insurance and pensions.

UNIONS - American Newspaper Guild, affiliated with CIO-AFL.

SOURCES FOR INFORMATION - Local newspapers and allied fields, American Newspaper Publishers Association, 485 Lexington Ave. N.Y. 17, N.Y., American Newspaper Guild, Research Department, 1126 16th. Street N.W., Washington 6, D. C.

NOTES - (Additions, local information.)

# Employment Information Series

Written
January - 1966

RESTAURANT MANAGER
187.168-126

**NATURE OF THE WORK** The primary function of the restaurant manager is to operate an eating establishment in an efficient, smooth running, and profitable manner. His major duties include: supervising and coordinating the restaurant staff; maintaining inventories of food and supplies; purchasing food, supplies, and equipment; and keeping daily records of purchases.

Moreover, the manager consults with the chef or cook to plan and evaluate menus in terms of customer appeal, nutritional balance, preparation and costs involved, and prices to be charged. He interviews, hires, trains, and discharges employees. He must inspect the premises to ensure that health and sanitation regulations are observed. He must also supervise any repair work. The restaurant manager maintains frequent contacts with customers, greeting them and establishing a friendly atmosphere, obtaining their suggestions about food and service, and handling their complaints. He may also be responsible for advertising and public relations.

In large restaurants the manager may have one or more assistants who perform some of his functions. Many small eating places are managed by their owners who, in addition to managerial duties, may act as cashiers and even take customers' orders during busy periods.

## OPPORTUNITIES

**Current** Opportunities for well-qualified people are expected to be favorable throughout the sixties. At the present time there are at least twenty management positions open for every graduate of a college program in hotel and restaurant administration. Opportunities are good for experienced kitchen and dining room workers to advance through the ranks to managerial positions if they demonstrate managerial abilities.

**Trends** With the rising standard of living, people can afford to travel and eat out more often. At present, the restaurant business is the fourth largest retail industry in Ohio and in the United States. In the years ahead, the demand for new restaurants and public eating places will continue to grow--as will the demand for managers to operate them. The mushrooming of chain restaurants across the country, in particular, will create many new executive positions in home offices as well as managerial positions in branch establishments.

**Women** There is a prevalence of men in executive and management positions in the restaurant industry. In recent years, however, women have generally become accepted on an equal basis with men. They are given opportunities to rise to the top executive level, and they receive commensurate salaries.

FIELDS OF EMPLOYMENT This field encompasses commercial restaurants, industrial plants, hotels, resorts, department stores, schools, private clubs, and all other public eating places.

AREAS OF EMPLOYMENT It is estimated that there are over 36,000 restaurant managers employed in Ohio. Although jobs are available in almost every community, the best opportunities are in metropolitan areas, such as Cincinnati, Cleveland, and Columbus.

REMUNERATION Wages vary widely, depending on the size and geographic location of the establishment. In general, however, restaurants, industrial plants, and hotels pay the highest wages.

Beginning salaries range upwards from $4,000 a year. Individuals with three or more years of experience receive between $6,000 and $10,000 a year. A few managers with many years of experience are paid up to $20,000 a year. Income earned by individuals who own and operate their own eating places varies a great deal.

If Sunday and holiday work are required, some extra compensation may be made. Free meals are provided to personnel while they are on the job. Managers are usually provided with health and accident insurance and offered bonuses and other benefits. Vacations with pay are granted annually.

## REQUIREMENTS FOR ENTRY

Selection Factors good physical and emotional health, interest in food and food preparation, sound business sense, supervisory and organizational abilities, ability to get along with all types of people, habits of neatness and cleanliness, ability to work under pressure

Education and Training Employers differ with respect to the degree of education and specialized training they require of managers. It is becoming increasingly important, however, to complete a secondary education. High school courses which are necessary to future managers are home economics and business subjects, such as bookkeeping. Moreover, there are many opportunities for high school students to gain practical experience in summer and part-time jobs, such as bus boy or waiter.

Vocational or technical school training in quantity food preparation and restaurant management are valuable in qualifying individuals for entry jobs in restaurants. With several years of experience in all phases of restaurant work added to this training, individuals may advance to managerial positions.

The majority of large restaurants require their managers to have a college education. Preferred college majors are restaurant management and institutional management. A degree in business administration is acceptable. A number of colleges offer a four year work-study program in food service. The curricula include courses in food selection and preparation, fundamentals of nutrition, dietetics, quantity and experimental cookery, menu planning, purchasing, meat selection and cutting, catering and banquet service, accounting, law, marketing, finance, management, sanitation, and traditional academic subjects. The program also requires students to acquire practical experience by working for three summers in restaurants or hotels in positions ranging from bus boy to assistant manager.

A complete list of technical and vocational schools and colleges which offer food service programs may be obtained from the Council on Hotel, Restaurant and Institutional Education.

SCHOLARSHIPS The H. J. Heinz Company annually offers $1,000 college scholarships. Completed applications must be filed each year before February 1. Forms and detailed information are available from the Educational Director of the National Restaurant Association.

WORKING CONDITIONS The restaurant manager generally works more than 40 hours a week. He may start at 9 in the morning, take off a few hours during a slack period in the afternoon, and work until late in the evening. He may also have to work on weekends and holidays.

The manager may spend considerable time on his feet to check the efficiency of personnel and mealtime operations. He may be subjected to various kinds of pressure from customers, employees, and labor organizations, or during peak periods. Managers of chain restaurants are sometimes under pressure to meet assigned sales quotas.

Work surroundings are clean and sanitary and often air-conditioned. In large restaurants a separate office space is usually provided.

PROMOTION POSSIBILITIES Kitchen personnel, such as cooks or chefs, may advance to pantry supervisor, to food production manager, to assistant manager, to restaurant manager. Dining room personnel, such as head waiters, may be promoted to dining room supervisor, to assistant manager, to manager.

College graduates are usually hired as assistants to the manager and subsequently advance to manager. The next promotion may be to chain restaurant supervisor. Those with the necessary capital may open their own eating establishment.

PLACEMENT SERVICES Contact the local public employment service office, college placement bureau, personnel departments of restaurants and other eating places, private employment agencies.

SOURCES OF ADDITIONAL INFORMATION National Restaurant Association, 1530 Lake Shore Drive, Chicago, Illinois 60610; Ohio State Restaurant Association, 40 South Third Street, Columbus, Ohio 43215; Council on Hotel, Restaurant and Institutional Education, Statler Hall, Cornell University, Ithaca, New York.

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Bureau of Unemployment Compensation

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
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Ohio State Employment Service

**ROOFER**
**WATERPROOFER**

804. -, 861. -,
866. -, 843.884,
all suffixes

June,
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Applies composition roofing and other materials, such as tile and slate, to the roofs of buildings. Also waterproofs and dampproofs walls and other building surfaces...In applying composition roofing, first places overlapping strips of asphalt and impregnated felt over the entire surface. Then applies a coating of tar, pitch or other bituminous material to the new surface. This process is repeated until at least three layers or thicknesses of felt are in place. Finally, applies a surfacing of tar, pitch and gravel to protect the roofing materials from the weather. The composition roofer also lays other types of commercial composition roofing, such as roll roofing and asphalt shingles. In applying these materials, overlaps the roofing material and then fastens it to the roof base with nails or asphalt cement. If necessary, cuts the material to fit corners, pipes, and chimneys. Then cements or nails flashing (strips of metal) wherever two roof surfaces intersect. Flashing is installed to make the intersections (joints) watertight. In another method of applying roofing, the roofer mops a layer of hot asphalt over the entire surface and rakes pebbles over the asphalt... Also uses metal, tile, and slate for the more expensive types of roofs. Metal roofs are constructed by soldering metal sheets together and nailing them to the wood sheathing. In installing tile and slate roofs, places a covering of roofing felt over the roofing sheathing. Punches holes in the slate or tile, and nails it to the wood sheathing. Each piece of slate or tile is placed so as to overlap the adjoining piece and is nailed into place. Finally covers the exposed nailheads with roofing cement to protect them from the weather. Usually, handtools are used in applying roof surfaces--for example, hammers, roofing knives, mops, pincers, and calking guns. Also does waterproofing and dampproofing work on parts of structures other than roofs, such as masonry or concrete walls that are in contact with the ground, swimming pools, and other tanks. Prepare surfaces to be waterproofed removing rough projections and roughing glazed surfaces, using a hammer and chisel. Then applies a coat of liquid compound with a brush. May also paint or spray surfaces with a waterproof material or nail waterproofing fabric to surfaces. In dampproofing work, usually sprays a coating of tar or asphalt on interior or exterior surfaces to prevent the penetration of moisture.

**OPPORTUNITIES**

**Current** - On a national scale there will be a few thousand new job opportunities annually during the 1960's both as a result of the anticipated large expansion in construction activity and the need to replace workers who retire, die, or transfer to other fields of work. On a local scale, the number of apprentices accepted tends to remain static. Up to date information can be gained from unions, contractors, and local offices of the Ohio State Employment Service.

Trends - While most of the future work will be concerned with application of roofing; dampproofing and waterproofing are providing an increasing proportion of the roofers' work.

FIELDS OF EMPLOYMENT - Main work is for roofing contractors on new building construction. They also do maintenance and repair work, especially on composition roofing. Self-employment figures in small, new building work, alteration and repair. Roofers also work for government agencies or business establishments doing their own construction and repair work.

AREAS OF EMPLOYMENT - Nation-wide and State-wide with concentrations in the highly industrialized and highly populated areas.

REMUNERATION - 1958 survey of 52 largest cities--$3.43 per hour. 1960 union rate for representative Ohio area--$3.63 per hour with a 17½¢ addition to the rate for waterproofers. The seasonal nature of the trade makes annual earnings less than hourly rates would indicate.

METHODS OF ENTRY - Authorities recommend completion of a 3-year apprenticeship program. A substantial proportion of roofers, however, have learned the trade informally.

REQUIREMENTS OF ENTRY - Applicant should be at least 18 years old. High school education or its equivalent is desirable. Good physical condition and a good sense of balance are important assets.

Training - The apprentice learns how to use, care for, and handle safely the tools, equipment, and materials commonly used in the trade; learns how to work with compositions, tar, and asphalt; and how to prepare roof surfaces for covering; learns how to apply pitch and other materials to roof and how to spread gravel; learns how to do slate, tile, and terra cotta work; and how to dampproof and waterproof. Related classroom instruction in such subjects as blueprint reading and mathematics applicable to layout work is also given.

Union membership - A large proportion of roofers are members of the United Slate, Tile and Composition Roofers, Damp and Waterproof Workers Association.

WORKING CONDITIONS AND HAZARDS - Like that of other building tradesmen, it is sometimes strenuous. It involves prolonged standing, as well as climbing, bending and squatting. These workers risk injuries from slips or falls from scaffolds or roofs.They may have to work outdoors in all types of weather, particularly when doing repair work.

AVENUES OF PROMOTION - May advance to the position of foreman for a roofing contractor or go into business for themselves.

ADDITIONAL INFORMATION - Local unions, contractors, Ohio State Employment Service office.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

**ROUTEMAN**
**292.358-010**

Rev.
Jan.
1960

NATURE OF THE WORK - Drives a light or heavy truck over an established route delivering products to homes, sales counters, businesses and vending machine locations. Products may include dairy products, baked goods, laundry, dry-cleaning, soft drinks, coffee, soups, sandwiches, potato chips, and other foods, and beverages. Also, safety shoes and mechanics' tools to factories, and bottled gas and water softener service to rural homes. Industrial food service requires delivery to construction sites, factory locations or warehouses where customers who lack restaurant facilities buy on the spot. Delivers products in amount requested on a bulk or individual basis. Generally issues a duplicate receipt and in some cases collects payment on goods delivered. In most fields endeavors to interest new customers as well as old in the products of his company. May also participate in marketing programs, promotions and general advertising procedures set up to aid and benefit the sale of products in his assigned territory. May need to be familiar with the streets in certain sections of the city, or in surrounding towns. In exceptionally busy times such as holidays may have helper to handle increased volume of business. Vending machine routeman may use mechanical ability to repair or adjust machine operations.

OPPORTUNITIES

Current - There are openings for route-men in the bakery, dry-cleaning, food distribution and vending machine business.

Trends - Personal services and new products which are delivered and sold direct to the business or household customer are on the increase. Distribution of existing products shows indication of expansion. More men will be required to take care of this growth.

FIELDS OF EMPLOYMENT - Dairies, bakeries, soft drink and beer distributors, vending machine sales (cigarettes, coffee, sandwiches, soups, candy,) ice cream distributors (bulk and street sales) and bottled gas and water softener companies.

AREAS OF EMPLOYMENT - Ohio uses a very large number of men in this vocation. Distributors are located through-out the state.

REMUNERATION - Income for such work may be a regular weekly wage or monthly salary; or basic wage plus commissions on sales, depending on the company and the nature of the product. Starting wages begin at $60.00 a week and may increase to $125. Basic wages plus commissions on sales average from $350 to $550 a month.

# ROUTEMAN

## REQUIREMENTS FOR ENTRY

General - Must be at least 18 years old, must be bondable when handling money, have a chauffeur's license, and able to work hours required.

Education - High school education desirable with courses in English, bookkeeping, speech, general arithemtic and science. Experience in working with people and meeting them on a business basis is valuable. Must be aggressive, have tact in dealings, dress neatly and drive carefully.

Physical - Most jobs demand good physical condition. May be required to lift and carry up to 75 pounds. Have good eyesight and normal physical ability.

WORKING CONDITIONS - Works both indoors and outdoors. Generally loads truck at the store or warehouse. Drives truck to customer locations to make delivery. Must work in year-round weather conditions. Hours of work may be in early morning, during the day or at night. Usually wears uniform. May work overtime when demands for service warrant.Some services require rural home delivery or intertown routes.

UNION AFFILIATION - Some routeman belong to their plant union; others are represented by the International Brotherhood of Teamsters, AFL-CIO, Dairy, Bakery and Food Workers, and some are not unionized.

AVENUES FOR PROMOTION - Routemen may become traffic men, salesmen, promotional agents, supervisors, customer service men; may also advance to management occupations--personnel, trade promotion, etc. Experience, additional education, real interest in the business and acceptance of responsibility lead to advancement.

SOURCES FOR INFORMATION - Contact places of employment, such as bakeries, breweries, soft drink establishments, vending machine operators, bottled gas distributors etc. Note ads in papers for driver-salesman.Contact your Ohio State Employment Service office for additional information.

NOTES - (Local openings, wages and commissions, union requirements, etc.)

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
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Ohio State Employment Service

## SALESMAN, INSURANCE
## 250.258-014
## (LIFE)

Revised
October
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Sells policies providing life insurance and retirement protection for individuals and groups. May also sell accident and health policies. May be called a life underwriter if he plays a major part in judging insurance risks on small policies. (Agents selling industrial life insurance, usually in amounts of $500 or less, with premiums personally collectable, are not covered in this release.)

Meets people in their homes or places of business explaining in nontechnical language the kinds of policies and coverages available, costs involved, and benefits provided. In office, selects new prospects and plans insurance programs for clients.

Seeks to balance client's ability to pay against his need for protection. With experience and advanced training provides client with a long-range insurance program which includes overall financial planning. This ranges from pure protection (term insurance) to pure investment (endowment), and calls on specialized knowledge of tax law and estate planning.

Usually represents only one company. Works in company's branch or district office.

**OPPORTUNITIES**

**Current** - On a national scale, expected to be good during the 1960's with 5000 new openings annually, and many replacements for those who retire, die, or transfer. Since men in their early 30's are preferred, and the 1930's were a period of low birthrate, competition for qualified applicants will be keen.

**Trends** - Employment will continue to rise in the long run.

**For Women** - Represent 3% of the profession.

**AREAS OF EMPLOYMENT** - Nation-wide. In Ohio, smaller towns and outlying areas offer the best opportunities for the new man. During the post-war period, small-town agents saw their clients moving to cities, and many eventually followed them, This left much territory relatively unattended, with agents remaining having a higher average age than elsewhere.The new man has a good chance to dominate this market.

**REMUNERATION** - Beginning agents generally face stiff competition so are usually financed under company plans for periods up to 3 years, providing they meet a minimum sales figure. After subsidy, agents' earnings are direct commissions on new policies sold, and in some cases, smaller commissions for renewals for a period of years. After 4-5 years, an agent may be making $5-$10,000 annually. Earnings are considerably higher for the most successful agents.

**METHOD OF ENTRY** - Should apply through agency in home community, write to the main offices of insurance companies, or contact the local office of the Ohio State Employment Service.

**REQUIREMENTS OF ENTRY**

**Selection factors**

## SALESMAN, INSURANCE (LIFE)

General - Although the minimum age is 21, applicants between the ages of 28 and 45 are preferred because the individual must be mature and present a mature appearance. Because of this, and because the 1960's will present a shortage of preferred-age candidates, life insurance companies will be more responsive to hiring applicants over 45 years of age. In this age group, applicants are chosen on the basis of sales experience or successful proprietorship of a retail business. (For example, retail grocery store owner-proprietors displaced by supermarket operations moving into their neighborhoods.)

Men with legal or accounting backgrounds are also preferred--particularly in cases where their professions have not given them the degree of personal contact they desired.

Preferred applicants have the ability to grasp insurance fundamentals, the ability to establish a sound, personal relationship with clients, and a full recognition and belief in the ability of life insurance to aid their clients' financial plans.

Purely extrovert qualities which are often associated with salesmen are not necessarily the rule for the ordinary life salesman--the man who can appreciate the feelings of others and react accordingly may be very successful.

Should have the ability to communicate with people on all levels of economic and cultural position.

Both personal interviews and aptitude tests are used in selecting agents.

Educational - No formal educational requirements exist. The majority of applicants selected in recent years had college training or were college graduates.

Licenses, examinations - A written examination is required. See Part VI, Licensed Occupations in Ohio, Employment Information Series.

Training - Most companies conduct a well-rounded program of on-the-job training and education. After 1 year, agent is eligible for program in selling techniques offered by the Life Underwriter Training Council, an industry-sponsored organization.

Advanced training on the college level is available from another industry-sponsored organization--The American College of Life Underwriters. Passage of required examinations plus 3 years' insurance sales experience entitles the agent to the professional degree, Chartered Life Underwriter (CLU). These exams test the agent's ability to apply his knowledge of life insurance, economics, business law, taxation, trusts, and finance--to insurance problems.

WORKING CONDITIONS - Agents generally make a number of calls each day, usually using a car, and paying their own expenses. Evening and week-end appointments are frequent and necessary.

AVENUES OF PROMOTION - After approximately 2 years, agents who have done a reasonably good job of selling, are often offered a choice between two avenues--continued selling or management. There is an even greater shortage at the present time for management personnel than for agents. Agents preferring to remain in sales, generally advance to more technical and complex specialties such as business insurance, pension consulation, profit sharing, group insurance, etc.

ADDITIONAL INFORMATION - Institute of Life Insurance, 488 Madison Ave., N. Y. 22, N.Y.; Life Insurance Management Association, 855 Asylum Avenue, Hartford, Conn.; Local sources: Ohio State Insurance Department, 115 East Rich St., Columbus, O.; local life insurance companies, agencies, and agents.

# EMPLOYMENT INFORMATION SERIES

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## SALESMAN, INSURANCE 250.258-014 (PROPERTY AND CASUALTY)

Revised
October
1960

## OCCUPATIONAL RELEASE

NATURE OF WORK - Sells insurance against property damage or loss. May work directly for an insurance company or may be an independent businessman representing one or more insurance companies. Must understand insurance fundamentals and be able to establish sound personal relationships with clients. Spends most of his time meeting people to explain policy terms and evaluate insurance needs. Often required to be familiar with production processes, the kinds of losses that can occur in industry, and the safety measures used in plants, in order to explain clearly and simply how much and what kind of insurance may be needed. If selling workmen's compensation, automobile liability, and other kinds of public liability insurance, must have a knowledge of the various hazards that may cause injury to people for whom the insured is responsible. If representing a multiple-line company, may sell a single policy which protects the owner of a dwelling or industrial plant against fire, explosion, burglary and other hazards. If representing more than one insurance company, selects the particular company that best satisfies the client's needs. May specialize in selling one kind of insurance--for example, accident and health, or automobile insurance.

Usually spends part of each day planning daily schedule of visits and compiling a list of prospects. Keeps up-to-date records of client's needs, as a basis for additional sales, and works out insurance programs adapted to a client's circumstances. Careful attention to servicing clients is recommended as one of the most successful ways of guaranteeing insurance renewals.

OPPORTUNITIES

Current - Providing economic conditions remain favorable, numerous openings should occur on a national scale in the early 1960's, due to growing business and individual needs. and due to replacement needs.

Continued expansion of public liability laws will contribute to the need for more agents. Although prospects for entering the field are favorable, keen competition for sales will continue.

Trends - Opportunities will favor the college graduate or individual with some college training. Greater emphasis will be placed on in-service training. If present expansion of the business continues, opportunities should remain good well into the future. People are tending to buy all of their insurance from one agent, rather than several specializing in one or two lines apiece. In this connection, specializing companies are initiating other coverages or acquiring other companies so as to handle not only casualty, but life, accident and health insurance in addition.

Merchandising methods are also undergoing changes, which require a broader knowledge by the agent. Package policies have become generally accepted. So have monthly premium payments.

## SALESMAN, INSURANCE (PROPERTY AND CASUALTY)

Insurance buyers are increasingly aware of costs and are more willing to shop around for what they feel is the best buy, which also contributes to competition in the field.

AREAS OF EMPLOYMENT - Every section of the country. As suburbs have grown, so have opportunities for agents outside of large cities.

REMUNERATION - Largely related to individual's ability to locate prospective clients and to make sales. Some new agents receive modest salaries--most depend mainly on commissions from sales.After a few years when earnings depend mainly on commissions alone, annual income may range from $7500-$15,000 annually.A proportion of highly successful agents earn substantially more.

Commission earnings are based on a percentage of the annual premiums paid by policyholders. With some companies, the same commission rate for new sales applies to renewals, which commonly occur every 3-5 years. Others pay less for renewals.

ENTRY METHODS AND REQUIREMENTS - Many large companies and agencies prefer to hire college graduates or men with some college training who can easily grasp insurance fundamentals.Most companies or agencies have some method--ranging from carefully planned training programs to on-the-job supervision--to help new agents get started. Newcomers usually start by selling the simpler type of policies and many increase their knowledge of the insurance business through company or industry-sponsored programs.

The Insurance Institute of America has an educational program for agents who wish to learn the fundamentals of property and casualty insurance.The National Association of Insurance Agents offers elementary and advanced educational programs for agents. Advanced study is also available through the program of the American Institute for Property and Liability Underwriters, with home or class study conducted by colleges, insurance societies, or company groups leading to 5 written examinations.With fulfillment of a 3-year insurance experience requirement plus successful completion of the exams, the agent receives the designation--Chartered Property Casualty Underwriter (CPCU).This training enables the agent to handle more complex types of industrial insurance. It is of special importance to agents operating their own businesses to have an expert knowledge of various types of insurance and some background in subjects such as accounting, economics, and business law. Agents dealing with industrial firms benefit from a knowledge of manufacturing processes, safety methods, and construction problems.

Licensing - All States require licensing--2/3 (including Ohio) require a written examination covering the insurance laws of the State, and property and casualty insurance fundamentals.A fee of $5.00 must be paid for this exam by the individual applicant. The insurance company hiring the applicant must request a license for him and must do so in advance of the examination.

Selection factors - Ease in dealing with people, good sales approach, ability to explain insurance matters simply and clearly.Sense of responsibility in planning own work, willingness to take initiative in obtaining prospects for sales, and giving services to policy holders.

AVENUES OF PROMOTION - Agent may advance to operating his own agency, or qualify for home office supervisory or executive positions.

ADDITIONAL INFORMATION - Local insurance agencies.

NOTES - (Local opportunities, etc.)

# EMPLOYMENT INFORMATION SERIES

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## SALESPERSON, GENERAL

289.458-014

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June
1963

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Assigned to specific area in store where he displays, explains, demonstrates, and sells merchandise to interested patrons. Determines the make, type, size, pattern or design, quantity, and price range of article desired by the customer. Shows article(s) to customer emphasizing its desirable features such as: quality, style, durability, fit, material, price, appearance, maintenance cost, etc. Assists the customer in making a selection through demonstrations, explanations, and suggestions. Usually prepares sales or charge slips on purchase, giving a description of the article(s) sold, price,and self-identification number. Slips made out for articles charged or sent C.O.D. also include the name, address, and signature of the individual making the purchase. A sales contract is prepared for merchandise purchased on a time payment plan. Receives money in payment for article, makes change, wraps merchandise and gives it to customer along with sales receipt. May prepare article for delivery. May be responsible for keeping stock orderly and neat in appearance, and covering or removing it from display counters at night. May order new merchandise and/or reorder to replenish stock, arrange counter displays, stock shelves or racks, mark price tags, and take inventory. May sell one or more items depending upon the size, type, and arrangement of the retail establishment. Specific duties, techniques, and knowledges are unique to special types of merchandise. Salespersons sell such products as art goods, automobile accessories, household appliances, furniture, clothing, floor coverings, cutlery, china, athletic equipment, decorating accessories, hardware, etc.

OPPORTUNITIES

Current - Employment prospects are good. Openings are available for full-time and part-time employment. At present, sales positions are prevalent in suburban areas as a result of the growing number of shopping plazas. Opportunities develop constantly as a result of the need to replace those who retire, die, or leave the occupation for other reasons.

Trends - The number employed in retail stores is expected to rise moderately. Several factors will determine the rate of growth in this occupation. an increase in the volume of goods as a result of the growth in population and rising income levels; longer store hours; and a decrease in the number of hours worked per week will create a need for additional salespersons. The nature and size of the retail store will influence the number of sales positions created. Proportionately speaking, fewer salespersons are required in larger retail establishments and in those stores using the self-service technique.

Men - Predominate in stores selling furniture, household appliances, hardware, farm equipment, shoes, lumber, and agencies selling automobiles.

Women - Outnumber men in department and general merchandise, variety, apparel and accessories, and drug stores.

# SALESPERSON, GENERAL

FIELDS AND AREAS OF EMPLOYMENT - Employment can be obtained in any one of many different kinds of retail stores in all communities. The majority are employed in department and clothing stores in large cities and shopping centers.

REMUNERATION - The starting salary for salespersons employed by department, shoe, variety, apparel, drug, general merchandise stores, ranges between $35 and $55 per week. Experienced salespeople usually receive $10 to $25 more per week. Persons selling automobiles, major appliances, and furniture may earn a salary of $100 or more per week. May be paid a straight commission (certain percentage of the amount of sales made) or a salary plus a commission either on sales made or sales over a set quota. Amount earned depends on type and size of store, geographic location, and individual's experience and sales ability. In addition, many employers permit their employees to purchase merchandise at a discount, 10-20% below regular prices. Extra benefits may include life insurance, paid vacations, hospitalization, retirement, medical and surgical insurance.

REQUIREMENTS FOR ENTRY

General - Persons entering this field should be interested in sales work, have a sincere liking for and a genuine interest in people, be able to express themselves orally, have good health, and possess a comprehensive knowledge of basic arithmetic. Personal characteristics should include patience, tact, pleasant speaking voice, initiative, stamina, a friendly, pleasant manner, and a clean neat personal appearance. May be required to have a sound knowledge of the qualities and selling points of the merchandise, sales training, and experience.

Education - High school graduation is usually required by most employers. College training is helpful for advancement in the field of merchandising. Participation in a distributive education program is highly desirable for entry into this occupation. Recommended background courses include English, salesmanship, commercial arithmetic, home economics, merchandising, principles of retailing, and retail selling. Most stores give on-the-job training. Salespersons are taught how to make out sales slips and use cash register, selling techniques, store policies and procedures, etc.

WORKING CONDITIONS - The majority work indoors behind a sales counter or on the sales floor. Full-time salespersons may work either 5 or 6 days a week. May work one or more evenings a week, particularly if the store is located in a shopping center. Longer than normal work days will be scheduled during Christmas and other peak selling periods. Regular breaks are usually provided because the work involves more standing and walking than many other vocations.

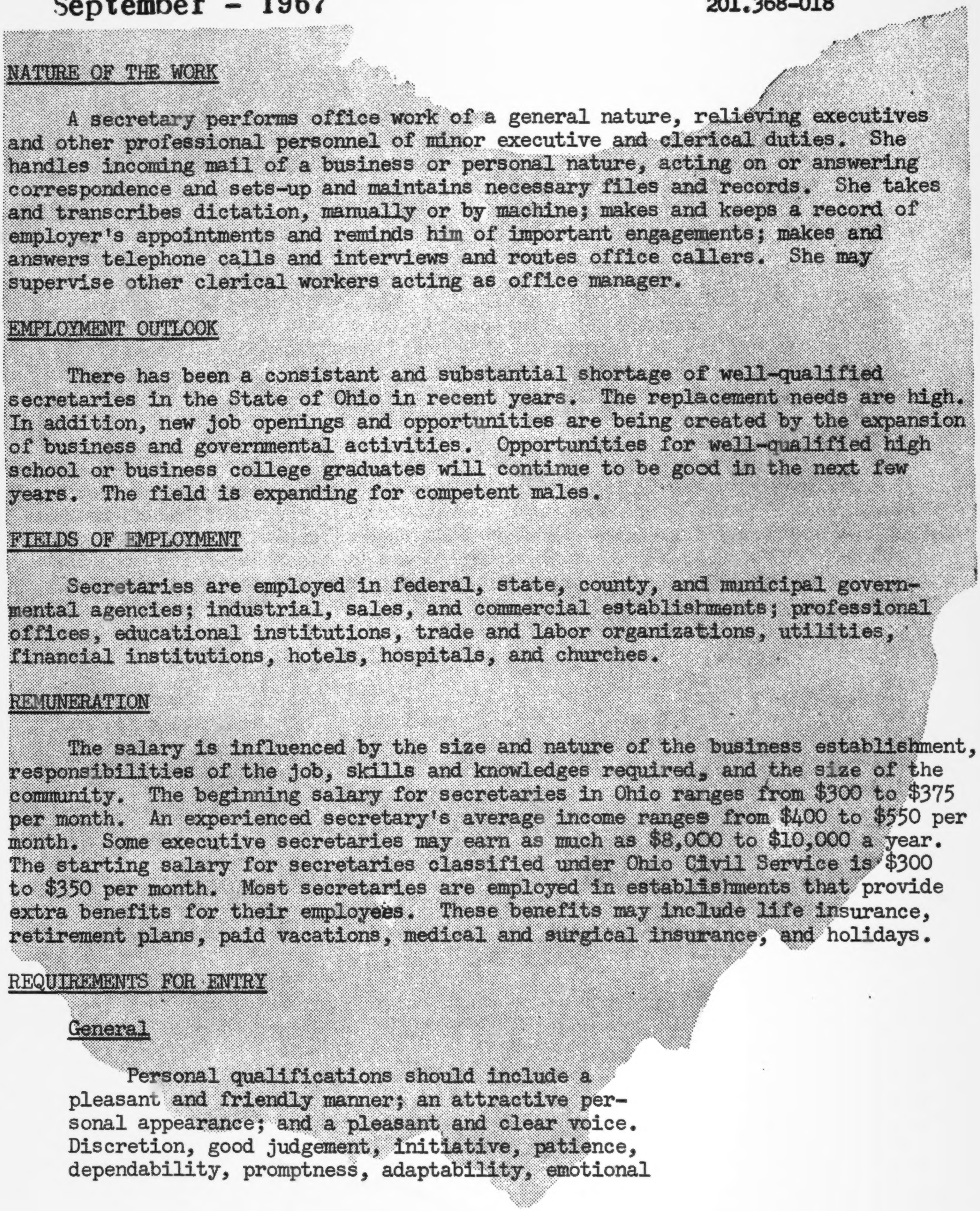
AVENUES OF PROMOTION - Most stores offer good opportunities both for college graduates and those without a college degree. Two factors influencing advancement of sales people are initiative and sales ability. Although some of the jobs in the following list will not exist in smaller stores, most salespeople will advance along the following lines: salesperson - assistant buyer - buyer - department manager - division merchandise manager - store manager. Opportunities are also available in personnel and public relations work.

SOURCES OF ADDITIONAL INFORMATION - Write or contact: local retail stores, local Ohio State Employment Service offices, local coordinator of distributive education or State Supervisor of Distributive Education, 220 S. Parsons Avenue, Columbus, Ohio.

# Employment Information Series

Revised
September - 1967

**SECRETARY**
**201.368-018**



## NATURE OF THE WORK

A secretary performs office work of a general nature, relieving executives and other professional personnel of minor executive and clerical duties. She handles incoming mail of a business or personal nature, acting on or answering correspondence and sets-up and maintains necessary files and records. She takes and transcribes dictation, manually or by machine; makes and keeps a record of employer's appointments and reminds him of important engagements; makes and answers telephone calls and interviews and routes office callers. She may supervise other clerical workers acting as office manager.

## EMPLOYMENT OUTLOOK

There has been a consistant and substantial shortage of well-qualified secretaries in the State of Ohio in recent years. The replacement needs are high. In addition, new job openings and opportunities are being created by the expansion of business and governmental activities. Opportunities for well-qualified high school or business college graduates will continue to be good in the next few years. The field is expanding for competent males.

## FIELDS OF EMPLOYMENT

Secretaries are employed in federal, state, county, and municipal governmental agencies; industrial, sales, and commercial establishments; professional offices, educational institutions, trade and labor organizations, utilities, financial institutions, hotels, hospitals, and churches.

## REMUNERATION

The salary is influenced by the size and nature of the business establishment, responsibilities of the job, skills and knowledges required, and the size of the community. The beginning salary for secretaries in Ohio ranges from $300 to $375 per month. An experienced secretary's average income ranges from $400 to $550 per month. Some executive secretaries may earn as much as $8,000 to $10,000 a year. The starting salary for secretaries classified under Ohio Civil Service is $300 to $350 per month. Most secretaries are employed in establishments that provide extra benefits for their employees. These benefits may include life insurance, retirement plans, paid vacations, medical and surgical insurance, and holidays.

## REQUIREMENTS FOR ENTRY

### General

Personal qualifications should include a pleasant and friendly manner; an attractive personal appearance; and a pleasant and clear voice. Discretion, good judgement, initiative, patience, dependability, promptness, adaptability, emotional stability, memory for details, and efficient work habits are necessary. The ability to meet and work with people, to take orders and follow through with them, plan and organize material, and make decisions are needed. Some employers prefer applicants between the ages of 18 to 35, although others prefer older, experienced workers.

### Training

Secretarial preparation should include thorough instruction in typing and shorthand, business practices and procedures, filing, business English, and operation of office machines. Junior college or university training is sometimes preferred especially for positions which have promotional possibilities.

### Knowledge and Skills

A secretary should possess a thorough knowledge of spelling, punctuation, and grammar; the ability to read rapidly and accurately and to type at least 50 net words per minute and take dictation at the rate of 90 net words per minute. Most employers require high school graduation and completion of a business course in high school, junior college or business school.

## WORKING CONDITIONS

Secretaries in private industry usually work a 5-day work week of from 38 to 40 hours. Private and executive secretaries are sometimes called upon to work additional hours. The work is inside where lighting and ventilation are adequate. Secretaries may work around others or alone depending upon the size of the establishment. Eye strain may result from continual reading and transcribing.

## AVENUES OF PROMOTION

Most workers start in this occupation as a stenographer or clerk-typist. Workers may be promoted from a secretarial position to administrative assistant or executive secretary, office manager, department head or executive. Promotion is based upon training, work experience, knowledge of the job, supervisory ability and seniority.

## SOURCES FOR ADDITIONAL INFORMATION

Contact: The Ohio State Employment Service office in your community; local business colleges: Read: Clerical Occupations for Women Today and Tomorrow, (Women's Bureau Bulletin, 289, 1964) Superintendent of Documents, Washington, D. C., 20402, Price 35 cents.

NOTES: (Local openings, persons to contact, current pay rate, and training opportunities).

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Counseling Section
Ohio State Employment Service
Bureau of Unemployment Compensation
145 South Front Street
Columbus, Ohio 43216

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: January 1968

## SERVICE STATION ATTENDANT
915.867

NATURE OF THE WORK An automotive service station attendant performs duties related to the servicing of passenger cars, trucks, and buses. He supplies gasoline, air, oil, and water, changes oil, lubricates vehicles, installs accessories, changes tires, repairs tubes, and tests and changes batteries. He may perform minor engine repairs or sell supplies. In a large station, he may specialize in one or more of the above services. He may assist in making daily reports, ordering supplies, taking inventories, and general station maintenance.

EMPLOYMENT OUTLOOK This a large occupation, with more than 350,000 people employed, offers favorable employment prospects. High turnover results in many openings for beginners. As the number of automobiles increases, more service stations will be creating thousands of full and part time openings. Many companies will finance an ambitious and dependable man and help him set up an independant dealership.

FIELDS OF EMPLOYMENT Automobile service stations owned or controlled by oil companies or individually-owned stations.

REMUNERATION Salaries vary greatly in this occupation due to the size and location of station and the particular duties performed by the attendant. Entry wages at the present time are approximately \$1.40 per hour with experienced attendants earning up to \$2.25-\$2.50 per hour. Many stations give a commission on sales but rates vary so that no definite standard rate can be stated. Opportunities for overtime work are usually available.

REQUIREMENTS FOR ENTRY

General Honesty and dependability are most important. Many service stations require that personnel be bondable. The applicant should have mechancial aptitude and some knowledge of automobiles. He usually needs a driver's license. The ability to follow directions, tact in dealing with the public, and good health are important. Knowledge of simple bookkeeping and supervisory ability are helpful for advancement.

Training Some high school education is preferred. Training is available through several sources. Some owners will give on-the-job training to qualfied applicants. Many oil companies maintain district training schools for new service-station employees. Training is also available under the Manpower Development and Training Act in several areas of the State. Your local Ohio State Employment Service office can supply information concerning this program.

WORKING CONDITIONS The work is both indoors and outdoors in all types of weather. Odors, vibration, and mechanical hazards are common. The hours may include weekend and night work or a rotating schedule.

AVENUES OF PROMOTION The attendant may be promoted to assistant manager, night manager, or station manager, vulcanizer, salesman for the oil company, or automobile mechanic on the basis of training and experience.

SOURCES FOR ADDITIONAL INFORMATION Write or contact: local Ohio State Employment Service office; Ohio Petroleum Marketers Association, 41 South High Street, Columbus, Ohio, 43215.

NOTES

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# EMPLOYMENT INFORMATION SERIES

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## SHEET METAL WORKER

804.281-010

Revised
June,
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Fabricates and installs ducts which are used in ventilating, air-conditioning, and heating systems. Also fabricates and installs a wide variety of other products made from thin metal sheets, such as roofing and siding, commercial stainless steel kitchen equipment, partitions, sheet-metal shelves in industrial establishments, store fronts, metal framework for neon signs, and materials chutes... In heating or air-conditioning duct work, lays out and plans the job, determining the size and type of sheet metal to be used. The ducts are often fabricated at the sheet-metal shop. In fabricating work, cuts the metal with hand snips and power-driven shears, as well as other types of cutting tools. Forms the metal with bending machines, hammers, and anvils, then welds, bolts, rivets, solders, or cements the seams and joints. However, prefabricated ducts in standard sizes are often available and these require little fabrication at the shop. Some duct fabrication is done at the work site in the installation process, especially on large sheet-metal jobs. In the installation, the component parts are fitted together and assembled. Hangers and braces are installed to support ducts, and joints may be soldered. Some journeymen workers specialize in shopwork or on-site installation work. However, it is essential that skilled workers know all aspects of the trade.

**OPPORTUNITIES**

**Current** - A few thousand job openings should arise annually during the 1960's because of the growth of the trade and the need to replace those who die, retire or transfer. Since this is a relatively small size occupation, the number of openings will be limited. Also, the number of apprentices accepted tends to remain static, locally. Up to date information should be obtained from local unions, contractors and local offices of the Ohio State Employment Service.

**Trends** - In addition to the expansion of construction activity, the expected large increase in permanently installed air-conditioning systems in residential, commercial and factory buildings will provide more work for sheet metal workers. Also, manufacturing industries employing skilled sheet-metal workers generally have favorable long-range prospects.

**FIELDS OF EMPLOYMENT** - Plants producing heating, refrigeration and air-conditioning equipment. Contractors engaged in residential, industrial and commercial building. Government agencies or business establishments doing their own construction. Self employment or in small shops doing specialty work. Also, railroad, aircraft, shipbuilding companies; and firms making blowers, exhausts, electrical generating and distributing equipment, food products machinery, steam engines and turbines.

# SHEET METAL WORKER

AREAS OF EMPLOYMENT - Nation-wide and State-wide.

REMUNERATION - This trade is less affected by seasonal factors than some others. 1958 union minimum survey of 52 large cities--$3.54 an hour average. 1960 union rate in representative Ohio area: $3.62 per hour. Apprentices generally start at 50% of the union minimum.

METHOD OF ENTRY - Authorities recommend the completion of a 4 to 5 year apprenticeship program as the best way to learn this trade. Some workers have learned the trade informally, as helpers, or observers, being trained by craftsmen and picking up some knowledge from correspondence schools.

REQUIREMENTS OF ENTRY - Applicants generally are required to be between the ages of 17 and 21; a high school education or its equivalent is desirable. Good physical condition and mechanical aptitude are necessary assets.

Training - The apprentice learns how to use, care for, and handle safely the tools, machines, equipment, and materials commonly used in the trade; learns how to solder; learns general work processes such as cutting, forming, folding, grooving metal material, and bending edges, and punching and drilling holes; learns how to do air-conditioning, heating and ventilating work; learns how to do residential installations such as roofing, gutters, and downspouts; and learns how to do architectural and industrial sheet metal work. Also receives related classroom instruction in subjects such as drafting, blueprint reading, and mathematics applicable to layout work. In addition, learns the relationship between sheet-metal work and other building trades.

Union membership - A large proportion of sheet-metal workers are members of the Sheet Metal Workers' International Association.

WORKING CONDITIONS AND HAZARDS - Many sheet-metal workers spend considerable time at the construction site, where they may work either indoors or outdoors. Other sheet-metal workers may work primarily indoors, doing fabricating and layout work. When installing gutters, skylights, and cornices they may work high above the ground level. When installing ventilating and air-conditioning systems, they may work in awkward and relatively inaccessible places. Sheet-metal workers run the risks of cuts and burns from the materials, tools, and equipment used in their trade.

AVENUES OF PROMOTION - Experienced sheet-metal workers have more job mobility than many other building trades workers because they can transfer their skills from the construction industry to the metal manufacturing industries. They may advance to the position of foreman for a contractor, become superintendents of large projects, or enter into business for themselves.

ADDITIONAL INFORMATION - Local unions, contractors, Ohio State Employment Service local office.

NOTES - (Local additions, opportunities, wages, etc.)

# Employment Information Series

Revised
September - 1967

**SOCIAL WORKER, PSYCHIATRIC**
**195.108-050**

NATURE OF THE WORK Psychiatric social work is a specialized form of social work dealing with people who have mental or emotional disorders. This work is done in close cooperation with psychiatrists, psychologists, and other specialists to reach a possible solution to the problems of individuals and their families. The problem or problems may involve the area of education, employment, recreation, or family relationships. In hospital settings the psychiatric social worker works closely with the medical staff and other hospital personnel. He interprets the social aspects of the patient's mental illness to relatives and friends in order to enlist their aid in treatment. He also works in an advisory capacity on a cooperative basis with the local agencies which are concerned. He especially assists the family and patient in making the maximum adjustment to community living when the patient is released from the hospital. In addition to working in private hospitals and clinics for the mentally ill and retarded, social workers are being used for psychiatric social work in child guidance clinics and in residential treatment centers for children, public welfare and private family agencies as well as in juvenile protective societies and in institutions for delinquents. The social worker may work with the patient as well as with the family, or he may work with the family as a group, or with groups of patients or parent groups. The social worker must compile case records by reporting and analyzing all data and preparing written reports for the use of associates. He prepares necessary correspondence relative to his cases.

EMPLOYMENT OUTLOOK Psychiatric social workers are in demand by many agencies, hospitals and clinics in every state. The available people are far short of supplying the need. Many employers will hire those with undergraduate degrees in the social sciences with the understanding that they continue their education in social work. Opportunities also exist for women who wish to work part time.

FIELDS OF EMPLOYMENT Besides serving in mental hospitals and mental health clinics, psychiatric social workers also serve in the several hundred child guidance clinics in the nation. They help psychiatrists work with children who have personality difficulties or behavior problems, and with their parents and teachers.

Other opportunities for practice in this field are in general hospitals that have psychiatric services; in Federal hospitals providing psychiatric care; in courts; community centers; and rehabilitation organizations.

REMUNERATION A beginning social worker with a baccalaureate degree may start at a salary from $5,000 to $6,000 a year. The entering salary for a graduate with a Master's degree in social work ranges from $6,600 to $8,000 a year. Experienced psychiatric social workers receive over $10,000 a year; some supervisory and administrative positions pay from $10,000 to $15,000 or more annually.

## REQUIREMENTS FOR ENTRY

General The ability of the social worker to form easy, friendly relations with people and to see another person's point of view is very desirable.

The work also calls for knowledge of human behavior and personal qualities of patience, tolerance, thoughtfulness, imagination, good judgment and ready adaptability to new situations.

Training College graduate with specialization in the social science are preferred. In addition, two years of specialized studies and practice to acquire a Master's Degree in social work is a necessity. Experience in dealing with people in need and securing ~~some~~ valid results requires a continuing educational attitide and schooling.

Licenses, Examinations Psychiatric case workers who are employed by governmental agencies must qualify through Civil Service examinations conducted and certified by the Ohio Department of State Personnel, or the United States Civil Service Commission. No license is required.

WORKING CONDITIONS A psychiatric social worker works in a psychiatric setting; this may be institutional, clinical, or in a home or school. He usually works 40 hours per week with arrangements for vacations, sick leave, study and conferences that are generally included in the salary agreement.

SOURCES FOR ADDITIONAL INFORMATION Write or contact: Ohio Department of Mental Hygiene, 65 South Front Street, Columbus, Ohio, 43216; National Commission for Social Work Careers, 345 East 46th Street, New York City, New York, 10017; Department of Applied Sciences, Western Reserve University, Cleveland, Ohio, 44106.

NOTES:

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# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed by the Counseling Section Ohio State Employment Service**

## OCCUPATIONAL RELEASE

## SPECIAL AGENT, F.B.I.

375.168-058

Revised April 1963

NATURE OF THE WORK - Investigates violations of federal laws which come under the jurisdiction of the Federal Bureau of Investigation; such as, extortion, kidnappings, bank robberies, sedition, sabotage, subversion, anti-trust violations, frauds against the government, thefts of government property, interstate transportation of stolen vehicles, and violations of neutrality laws. Agents function strictly as investigators. Primary function is to gather information and report evidence through objective observation and examination of persons, places, and articles relevant to assignment. May testify in court regarding specific cases.

OPPORTUNITIES

Current - The rate of personnel turnover is low, however, a few openings do occur as a result of replacement needs. The F.B.I. is always interested in receiving applications from qualified individuals who would like to be considered for positions as special agents.

Trends - This occupation is very stable. It is not anticipated that many vacancies will arise for agents in the near future.

AREAS OF EMPLOYMENT - The majority of special agents are assigned to one of the 55 divisional offices located in major cities throughout the United States and Puerto Rico. The remainder are stationed at F.B.I. headquarters, U. S. Department of Justice, Washington, D. C. or at F.B.I. resident agencies in many cities and towns across the United States.

REMUNERATION - The entrance salary for special agents is $7,290 per year. They receive periodic within-grade salary increases if their work performance is satisfactory. Following assignment to a field office, additional compensation may be earned for overtime in the performance of official duties, provided these activities meet certain official requirements. Special agents can advance in grade as they gain experience. May earn as much as $14,070 yearly, exclusive of overtime. Many agents in supervisory or administrative positions receive even higher salaries. Extra benefits include: Federal Employee's Group Life Insurance; Special Agents' Insurance Fund; insurance covering hospitalization, surgery, and major medical expenses; paid vacations; and sick leave. All agents are covered by the Civil Service retirement system.

REQUIREMENTS FOR ENTRY - The F.B.I. screens, examines, and hires its own personnel from those who successfully meet the entrance requirements. Candidates for Special Agent positions should file their applications at one of the divisional offices or at the F.B.I. Headquarters in Washington, D. C. In Ohio these offices are located at the Federal Building in Cincinnati and the Standard Building in

# SPECIAL AGENT, F.B.I.

Cleveland.

General - Male citizens of the United States, between the ages of 23-40 and a willingness to serve anywhere in the United States or Puerto Rico. Possess the following personal qualifications: courage, emotional stability, integrity, resourcefulness; ability to meet and deal with people, and apply analytical methods of examination to assignments. Capable of oral and written expression. Hold a valid driver's license. Knowledge of law or accounting and an aptitude for conducting investigations. These abilities and traits will be measured by oral and written examinations, administered by the F.B.I. at its divisional offices. All candidates undergo background and character investigations.

Education - Applicant must be: a) a graduate from a state-accredited resident law school with at least 2 years of resident, undergraduate work, or b) a graduate from a resident 4 year college with a major in accounting and a minimum of three years practical experience in accounting and/or auditing. Satisfactory completion of a course of training at F.B.I. Headquarters in Washington, D. C. and the F.B.I. Academy located at Quantico, Virginia. Instructions will be given in judo and defensive tactics, F.B.I. rules and regulations, investigative work, fingerprinting, and firearms.

Physical - Minimum height of 5'7" without shoes, normal color perception, and the ability to hear ordinary conversation at a distance of at least 15 feet with each ear. Uncorrected vision may not be less than 20/40 in one eye and 20/50 in the weaker eye. Corrected vision must be at least 20/20 in each eye. Pass rigid physical examination. Possess no physical defects which would prevent the use of firearms or participation in dangerous assignments, raids, and defensive tactics.

WORKING CONDITIONS - Must be available for assignments at any time, will be subject to call 24 hours a day. Agents frequently work longer than the customary 40-hour week. A considerable amount of traveling may be involved in the performance of duties. May be transferred from time to time, as the need arises, to any of the various offices throughout the country. Usually works alone, maintaining continual contact with superiors or supervisors.

AVENUES OF PROMOTION - All appointments are made on a probationary basis. They become permanent upon the satisfactory completion of one year of service. An experienced agent may advance to more responsible administrative or supervisory positions, such as special agent in charge of a field office, and inspector.

FOR ADDITIONAL INFORMATION - Federal Bureau of Investigation, U. S. Department of Justice, 900 Standard Building, Cleveland 13, Ohio, or 415 U. S. Post Office and Court House Building, Cincinnati 2, Ohio.

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: May 1968

# SPEECH PATHOLOGISTS AND AUDIOLOGISTS

079.108-038
079.108-010

NATURE OF THE WORK Speech and hearing are so interrelated that, although the speech pathologist concerns himself primarily with speech disorders and the audiologist with hearing problems, one must have a familiarity with both fields to be most competent. The speech pathologist works with children and adults who have such problems as stuttering, defective articulation, brain injury, foreign dialect, cleft-palate, mental retardation, and emotional blocks which are reflected in speech and voice disorders. The audiologist works primarily with people in the assessment and treatment of hearing problems such as those caused by certain inner ear and nerve disturbances.

The duties performed by speech pathologists and audiologists vary with their education, experience, and employment settings. In a clinical capacity, they evaluate speech and hearing disorders using various diagnostic procedures. An organized program of therapy follows in which physicians, psychologists, rehabilitation counselors, teachers, physical therapists, and social workers may assist. The speech pathologist and audiologist, during all phases of diagnosis and therapy, conducts information conferences with both parents, guardians, and clients. They may perform research work, consisting of investigating communicative disorders and their causes and improving methods for clinical services. Often, the speech pathologist and audiologist supervises assistants and volunteers in the clinical setting.

EMPLOYMENT OUTLOOK There is a tremendous shortage of traineed speech pathologists and audiologists, particularly in the clinic and university settings. This profession is rapidly gaining recognition and offers excellent opportunities for both men and women.

## CLOSELY RELATED OCCUPATIONS

Speech Clinician
Speech and Hearing Clinician
Linguist
Caseworkers
Guidance & Vocational Counselors
Psychologists

AREAS OF EMPLOYMENT The majority of speech pathologists and audiologists work in public school systems and clinical service centers. Colleges and universities employ the next largest number in classrooms and in clinics. The remainder, and a growing number, is distributed among hospitals, research centers, State and Federal government agencies, industry, and, to a lesser degree, private practice.

REMUNERATION Speech pathologists and audiologists with a bachelor's degree and no experience can expect to receive from $5,500 to $6,500 annually, depending upon the amount of training they have had and on the nature of the organization by which they are hired and its location. The smaller amount of $5,500 may be offered to the public school employee whose salary is based on ten (10) months' work annually. The pathologist and audiologist who hold a master's degree may earn from $7,000 to $11,000 annually. With experience and most administrative and supervisory responsibilities, one may earn from $12,000 to $22,000 annually.

Many experienced speech pathologists and audiologists in educational institutions supplement their regular salaries with incomes from consulting, special research projects, and from writing books and articles. Almost all employment settings provide such fringe benefits as paid vacations, sick leave, and retirement programs.

## REQUIREMENTS FOR ENTRY

General Since speech pathologists and audiologists are devoted to helping people with speech and hearing handicaps, they should have an interest in and liking for people and the ability to approach problems with objectivity.

Training A bachelor's degree, a program emphasizing science and humanities, is the minimum educational requirements for a beginning job as a speech pathologist or audiologist in the public schools. Requirements, however, are being raised in most states and areas of employment; a Master's degree is now the standard professional requirement for membership in the American Speech and Hearing Association and for positions in the clinic and university setting. The trend, especially in clinics and universities, in the near future will be toward doctorate degrees. Special scholarships and grants-in-aid are available for the bachelor's and master's candidates from colleges, clubs, the Federal government, and from national foundations and associations.

Undergraduate training in speech and audiology should include course work in anatomy, biology, physiology, physics, semantics, phonetics, child psychology, and mental hygiene. Specialized course work in speech and hearing, especially for the bachelor's candidate is required. The student should also obtain during his training sufficient clock hours of carefully supervised clinical practice, in order to qualify for certification by the American Speech and Hearing Association. This certificate is now required by a steadily increasing number of employers. Training is usually available at colleges and universities offering a broad liberal arts program.

## WORKING CONDITIONS

Most speech pathologists and audiologists work 35 to 40 hours per week. Some personnel engaged in research, however, may work longer and more irregular hours.

Working conditions are generally pleasant, although in some areas facilities may be inadequate because they have failed to keep pace with the demands of a growing population.

## SOURCES OF ADDITIONAL INFORMATION

Write or contact:

1) The State Department of Education for public school employment.

2) American Speech and Hearing Association
Dr. K. O. Johnson
9030 Old Georgetown Road
Washington, D.C. 20014

3) National Association of Hearing and Speech Agencies
919 Eighteenth Street, NW
Washington, D.C. 20006

4) The Department of Speech and Hearing Science
The Ohio State University
154 North Oval Drive
Columbus, Ohio 43210

5) Local offices of the Ohio State Employment Services.

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# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

STATION
INSTALLER I, II
822.381-050

Revised
October
1960

| | |
|---|---|
| PBX INSTALLERS | 5-53.020 |
| TELEPHONE REPAIRMEN | 5-53.240 |
| PBX REPAIRMEN | 5-53.240 |

NATURE OF WORK - Install and service telephone and private branch exchange (PBX) systems on customers' property and make necessary repairs on the equipment when trouble develops. Travel to customers' homes and offices, often driving trucks equipped with telephone tools and supplies. Make changes in existing equipment when requested. Telephone companies frequently combine two or more of these jobs.

Station Installers otherwise known as telephone installers install and remove telephones in homes and places of business, including coin-box telephones, switching equipment, and associated inside wiring. Connect newly installed telephones with outside service wires which they run to nearby cable terminals on buildings or poles. Must often climb poles in order to make these connections.

PBX Installers perform essentially the same duties as telephone installers, but specialize in more complex switchboard installations. Connect wires from terminals to switchboards and make tests to check their installations. May set up equipment for radio and television broadcasts, mobile radiotelephones, and teletypewriters.

Telephone repairmen, with the assistance of testboardmen in the central office, locate trouble on customers' telephones, associated inside wiring, and outside service wires, making necessary repairs.

PBX Repairmen locate trouble on customers' PBX systems. Make necessary repairs at PBX telephone switchboards and maintain associated equipment, such as batteries, relays, and power plants. May maintain equipment for radio and television broadcasts, mobile radiotelephones, and teletypewriters. May also service other electrical signal systems, and automatic-calling systems.

OPPORTUNITIES

Current - Nationally, replacement needs constitute the greatest single source of openings. Locally opportunities to enter the field are quite limited.

Trends - Large scale physical construction, which accounted for steady employment growth in the past, has been completed. Refinements on the existing system, such as direct-distance dialing, are the continuing concern. The increasing mechanization of telephone equipment has and will raise the technical standards applied when hiring telephone installers. However, openings will result only from replacement needs.

## STATION INSTALLER I, II

**REMUNERATION** - Highest rates in Ohio are paid in Dayton, Toledo, and Cleveland. $59.50 per week is the starting wage for installers in these cities. In other Ohio cities the starting wage is somewhat less, based on Ohio Bell's "locality wage difference." The pay range goes to a high of $119. a week for telephone installers and repairmen, and $125. for PBX installers and repairmen.

**ENTRY METHODS AND REQUIREMENTS** - Young, inexperienced men are hired and trained for these jobs.

**Selection Factors**

**General** - Good personal appearance and ability to meet people are important since much of the work requires dealing with customers. Mature sense of responsibility is needed for working with expensive equipment, driving trucks of the largest commercial fleet in Ohio, and working much of the time unsupervised. Important aptitudes--mechanical and mathematical for working with increasingly complex and specialized equipment.

**Educational** - Must have completed high school or equivalent. U.S. Armed Forces specialized training in related work is considered valuable.

**Physical** - Must pass rigid physical exam.

**Examinations** - Pre-employment tests are given to determine aptitudes.

**Knowledges** - A relatively high degree of knowledge of electronic concepts such as the vacuum tube and microwave is considered highly desirable.

**Training** - New entrants are given classroom instruction and on-the-job training. Classrooms are equipped with actual telephone apparatus to simulate working conditions. After a few weeks of classroom instruction, accompany skilled installers and learn the job by watching and helping them. Three months to a year of experience are required before workers are ready to perform installation work alone.

Training is continued throughout career to qualify men for more difficult and experienced assignments. Also, the rapid pace of technological change within the industry makes further training necessary from time to time.

**WORKING CONDITIONS** - Work indoors and outdoors in all kinds of weather. Pole climbing frequently necessary subject to emergency call-outs when lines or equipment break down.

**Unions** - Communication workers of America, International Brotherhood of Electrical Workers, independent unions.

**AVENUES OF PROMOTION** - Through cross-training may advance from telephone installer to PBX installer, or from telephone repairman to PBX repairman. Also, to elementary engineering and supervisory positions.

**ADDITIONAL INFORMATION** - Local telephone company, local telephone company worker's unions.

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: May 1968

# STATIONARY ENGINEERS
950.782-054

NATURE OF THE WORK The stationary engineer primarily operates and keeps in top running condition stationary steam boilers. In addition, he may operate other stationary mechanical equipment such as pumps, condensers, air compressors, and turbines. He serves a host of businesses and industries by providing power, heat, refrigeration, and air conditioning service to each. His duties vary with the firm he serves: in bakeries and breweries he may operate and service all kinds of equipment from boilers to ovens and kilns; in large hospitals and institutions - colleges, public schools, and government buildings - he may only serve in power plant operation or as a supervisor of operation and repair crews; and in hotels, motels, and smaller businesses, he may provide services to operate and maintain all major power, heat, and air conditioning equipment except electrical equipment. Such services may include cleaning and lubricating equipment, testing boiler water for chemical balance, firing the boiler, and cleaning boiler tubes and walls periodically.

On one hand, the stationary engineer gives operational service: inspecting equipment regularly, reading and adjusting meters and gauges to insure proper temperatures and pressures for each boiler, recording the amount of service each piece of equipment renders, recording and estimating amounts of fuel used in each piece of equipment and the amount of service each piece requires to show costs of operation, and analyzing coal, gas, and oil products to determine which will give maximum efficiency at minimum cost.

On the other hand, the stationary engineer gives repair service: he tests malfunctioning boilers for scale accumulation and analyzes water to determine chemical balance, readjusting equipment and adding chemicals to produce the better water-chemical relationship; he also services and adjusts boilers affected by soot, corrosion, and oil deposits; and he repairs and adjusts blowers and burners, replaces worn valves and gaskets, and tightens worn bearings on crankshafts and camshafts.

EMPLOYMENT OUTLOOK There is a growing demand for trained stationary engineers in every industry and location. This increasing demand can be attributed, on one hand, to an increase in electrical and power equipment in operation, in the number of industrial and manufacturing firms, in the increase in the use of air conditioning and water cooling systems, and in the growth of such industries as quick-freezing processes, commercial food preparation, and those converting to the use of atomic energy and, on the other hand, to a steadily decreasing number of young men entering this field of work during the last few years. Those who are willing to seek the necessary training and experience will always have a variety of positions from which to choose.

## CLOSELY RELATED OCCUPATIONS

Boilermakers
Fuel House Men
Gas Compressor Operators
Gas Turbine Operators
High and Low Pressure Firemen
Refrigerating Engineers
Water Treatment and Sewage Treatment Plant Operators

**AREAS OF EMPLOYMENT** The stationary engineer is indispensible to any organization which has self-contained heating, power, air conditioning, or water cooling systems. Such systems are found, the concentration in larger metropolitan areas, in large commercial buildings, ice manufacturing and distributing companies, hospitals, hotels, dairies, breweries, theaters, bakeries, pumping stations and sewage treatment plants, industrial firms and public utilities, meat and food packaging and storage companies, launderies and schools, oil refineries, and filtration plants.

The majority of stationary engineers belong to the International Union of Operating Engineers. A smaller number is affiliated with local, in-plant unions.

**REMUNERATION** The stationary engineer's salary varies with the geographic location in which he works, his responsibilities, and the size of the organization for which he works. In Ohio, the hourly pay averages between $3.25 and $4.75, the overall average being $3.77 per hour. A ten percent (10%) bonus is awarded to those stationary engineers who provide their employer with seven day coverage; another ten percent (10%) bonus is paid to those stationary engineers who work at night. Pay scales for first, second, and third class engineers vary with the amount of experience each brings to an employer. A stationary engineer can expect such fringe benefits as medical insurance, paid vacations, and retirement allocations.

## REQUIREMENTS FOR ENTRY

**General** A person interested in becoming a stationary engineer must be 18 years old, a high school graduate or the equivalent, must have good mechanical aptitude, and must be able to assume responsibility for careful inspection of and service to mechanical equipment.

Training In the past, training facilities for young men interested in becoming a stationary engineer have been inadequate to meet the growing needs of this occupation. Training could only be secured in an on-the-job training program or in a very few union-sponsored schools. Today, however, requirements for entry are becoming more standardized across the state, and a statewide union-sponsored apprenticeship program, one year in length, will soon be available to interested applicants. Both formerly and today, employers find that young men trained by the Navy and the Merchant Marines have the job skills and experience necessary to render excellent service to any organization.

Certification - License To have direct charge of a steam boiler or engine of 30 horsepower or more, a stationary engineer must pass an examination** for licensure on which he must score 70% or better. In order to qualify for the examination in Ohio, the worker must be 21 years of age and must have had at least one year's practical experience as an engineer, oiler, fireman, or watertender of a steam boiler or engine. He may also have worked as a boiler room attendant learning the duties that pertain to operation of a steam boiler including at least six months' experience as an actual steam boiler operator.

**Examinations for stationary engineers are offered every Monday in the district offices of the Division of Examiners of Steam Engineers in Cambridge, Cincinnati, Cleveland, Columbus, Toledo, and Youngstown. A total of examination scores plus years of experience determine whether a first, second, or third class standing will be awarded to each candidate. (85% or above score on the examination plus three years' experience are necessary for first class standing; 75% to 84% on the examination plus two years' experience are required for second class standing; and 70% to 74% on the examination plus one years' experience are necessary for third class standing).

## AVENUES OF PROMOTION

With experience and a greater knowledge of the entire system he serves, a stationary engineer may advance to chief plant engineer, superintendent of maintenance or repair, plant superintendent, or building manager or superintendent.

## WORKING CONDITIONS

With an increasing number of power systems using gas and oil fuel instead of coal, work settings for stationary engineers have become neater and cleaner. There is a great deal of noise in many of the less modern installations as well as danger from burns and injury from large power equipment. Safety releases now built into large power equipment and the safety practices each stationary engineer follows, however, are reducing the operational danger to each worker.

## SOURCES OF ADDITIONAL INFORMATION

1) Local Ohio State Employment Service Offices.

2) Local employers of stationary engineers.

3) Department of Industrial Relations
Division of Examiners of Steam Engineers
220 Parsons Avenue
Columbus, Ohio 43215

4) International Union of Operating Engineers
3515 Prospect Avenue
Cleveland, Ohio 44115

1641 West Fifth Avenue
Columbus, Ohio 43212

1015 Vine Street
Cincinnati, Ohio 45315

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# Employment Information Series

**Revised**
**April - 1966**

STATISTICIAN, APPLIED 020.188-034
STATISTICIAN, MATHEMATICAL 020.088-026

DEFINITION OF STATISTICS Statistics is a mathematical science that deals with facts which are expressed in numerical terms. Statistics may be divided into two areas of study. First, using mathematical theory as a basis, it develops a complex body of methods and techniques which may be implemented in statistical research on a variety of problems. Sampling is one example of such a technique.

Second, it applies these developed methods and procedures in the collection, organization, analysis, interpretation, and presentation of information. Acquired data are expressed in tables, charts, graphs, and mathematical formulas. Many branches of human knowledge that can be reduced to mathematical form are fit subjects for statistical inquiry. Thus, a statistician in the biological field may evaluate the effectiveness of a new vaccine by studying a sample of persons who have been treated with it.

The objective of statistics is to obtain useful, accurate data on a subject with the minimum expenditure of time and money.

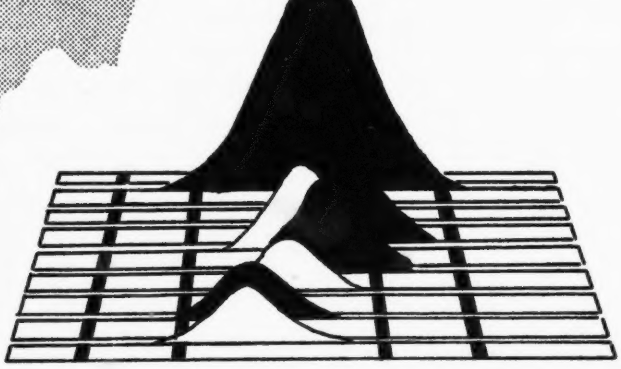
NATURE OF THE WORK Corresponding to the division of statistical work, there are two general classifications of professional statisticians—the mathematical statistician and the applied statistician. The former is a theoretician; he uses mathematical theory to design and improve statistical methods and techniques. He evaluates the applicability, efficiency, and accuracy of statistical tools which other statisticians use for researching problems in subject-matter fields.

He himself does not specialize in a subject-matter field; however, he frequently participates in practical research projects with applied statisticians. For example, he may investigate and subsequently advise other workers on the best sample design for a particular study. Or he may be involved in a project for which he must develop unique methods of arriving at solutions.

The applied statistician, on the other hand, studies problems in a particular field with the use of methods and techniques designed by the mathematical statistician. Briefly, he establishes a plan of investigation, collects the necessary data, analyzes the results, draws conclusions, and, finally, makes recommendations.

The individual statistician's specific duties, however, depend on the type and size of the employing organization. In a small firm he may be responsible for every phase of a project from its inception to its completion. In a large organization he may specialize only in one or two facets of data collection or presentation. Again, he may function primarily as an administrator—to field workers in the collection of data or to statistical clerks in the tabulation of data.

There are many areas in which the applied statistician may specialize: agriculture, biology, business, demography, economics, education, engineering, psychology, public health, and social



sciences. In agriculture, for example, he may assist farmers by estimating crop yield with a certain fertilizer, or he may advise manufacturers of farm machinery in locating their best markets. In aerospace engineering, he may help engineers and scientists determine the best design for a jet airplane.

Teaching statistics in colleges and universities is another major work area, especially for the mathematical statistician.

OPPORTUNITIES

Current Opportunities are extremely good for statisticians at the present time. As of 1963, there were over 20,000 persons in the United States working in this field: however, there are many more job openings than there are trained personnel to fill them. In government alone, it has been estimated recently that fifteen percent of all statistical positions are unfilled. The lack of individuals with advanced degrees is critical. Moreover, there is a severe shortage of statisticians qualified to work in the physical and natural sciences and in engineering.

Trends The future employment outlook is extremely favorable. There are definite indications of increased need of statistical research for problems in industry, government, civil defense, social welfare, and public health. New fields, such as that of electronic data processing, are fast developing. The greatest employment expansion is expected to occur in private industry.

Women There are no limitations on opportunities for women in this field. They are professionally engaged in all phases of statistical research. Advancement opportunities are probably best in teaching, government, and research positions in the social sciences. Women comprise approximately ten percent of the membership in the American Statistical Association.

FIELDS OF WORK Approximately forty percent of all statisticians in the United States are employed in business and industry--chiefly in market research, quality control, production and sales forecasting, and administration of statistical programs. Some twenty-five to thirty percent are with the federal government, primarily in the Departments of Defense; Commerce; Agriculture; Health, Education, and Welfare; and Labor. Approximately twenty percent, the majority of which are mathematical statisticians, are attached to colleges and universities and research centers.

State and local governments and nonprofit organizations employ some individuals. A few statisticians work independently as consultants.

AREAS OF WORK As of 1960, there were approximately 700 men and 250 women statisticians working in Ohio. The 1964 membership directory of the American Statistical Association includes 315 men and 21 women in Ohio. The greatest concentration of personnel are in Cleveland, Columbus, Cincinnati, and Dayton.

REMUNERATION According to 1963 estimates of private industry, starting salaries of new college graduates in applied statistics ranged between $5,000 and $5,500 a year. Starting salaries for mathematical statisticians with a B.A. degree were usually somewhat higher. Beginning workers with the master's degree earned between $600 and $1,200 more a year. Ph.D.'s could expect between $8,000 and $12,000 a year.

According to a study by the National Science Foundation, the average salary of all statisticians in 1964 was $12,000.

In the federal government, the annual entrance salary for inexperienced statisticians with a bachelor's degree on GS-5 level is $5,181. Those with a master's degree start at GS-7 level, $6,269 a year; Ph.D.'s begin at GS-11, $8,961. Mathematical statisticians have higher entrance salaries.

To be employed in the Ohio Civil Service System, an individual must have at least a bachelor's degree (with a minimum of three courses in statistics or research methodology) or four years' experience in statistical analysis, techniques, and procedures. The pay scale as of July, 1966, is as follows: statistician I, $440 a month; statistician II, $525; statistician III, $630; statistician IV, $690.

According to the U.S. Bureau of Labor Statistics in 1961, teachers in four-year colleges had an average income of $7,330 for the nine-month academic year. This includes a range from $5,310 for an instructor to $9,740 for a full professor.

The usual fringe benefits offered by employing organizations include paid vacations (two to five weeks annually) and paid holidays, life and health insurance, and retirement pensions. In addition, employers often pay tuition for those who wish to further their education.

## REQUIREMENTS FOR ENTRY

Selection Factors above average intelligence; strong mathematical aptitude and interest; ability to think clearly, logically, and accurately; persistence; ability to express oneself well orally and in writing

High School Education Since mathematics is basic to statistics, the high school curriculum should include plane and solid geometry, algebra, and trigonometry. Biological and physical sciences, social studies, and English should also be emphasized.

A summer or part-time job in an organization employing statisticians would give students an opportunity to gain first-hand knowledge of the occupation.

College Education Undergraduate preparation should lead to a bachelor's degree with a major in statistics. Relatively few colleges and universities, however, offer such a concentration in this field. In this event, the student should choose a major in mathematics, economics, or some applied area supplemented by as many statistics courses as possible.

Essential college courses for the prospective statistician include: college algebra, plane trigonometry, analytical geometry, differential and integral calculus, linear algebra, statistical methods, sampling, correlational analysis, design of experiments, probability, and, if available, electronic data processing.

In the area of mathematical statistics, it is becoming increasingly more important to obtain a master's degree. It may be absolutely required for entrance positions in teaching or in some large agencies; it is almost as indispensable for securing good subsequent promotions in any organization. The Ph.D. is essential for top teaching appointments and is an asset in obtaining high-ranking administrative posts and consulting work.

To ensure promotion in applied statistics, graduate training in the subject-matter field, as well as in statistics, is necessary.

WORKING CONDITIONS Most statisticians in industry and government have a standard forty-hour workweek. Teachers' hours are variable.

Except for those specialists in public opinion surveys who occasionally take sample interviews in various outside situations, statisticians work indoors. Office and classroom surroundings are usually modern and comfortable.

PROMOTION POSSIBILITIES In industry, one is promoted from junior statistician, to project statistician, to head of a statistical unit. Some experienced individuals (usually with the Ph.D. degree) become independent consultants.

Government positions start at GS-5 level and progress to GS-15. Advancement is based on education, experience, assumed responsibility, and demonstrated administrative ability.

In teaching, a statistician advances from assistant (usually a position held while in graduate school), to instructor, assistant professor, associate professor, and full professor.

PLACEMENT SERVICES Contact the local public employment service office, personnel offices of private organizations known to employ statisticians, placement bureaus of universities, and private employment agencies. Some firms recruit prospective employees directly from college and university campuses.

Government positions are filled through civil service examinations. Announcements for examinations are posted in municipal government buildings and post offices. Only first-class post offices have notifications of federal openings. Complete information may be obtained by writing to the U.S. Civil Service Commission, Washington, D.C. 20415, for federal civil service; to the state commission for state civil service; and to county or city offices for local openings.

SOURCES OF ADDITIONAL INFORMATION American Statistical Association, 810 18th Street, N.W., Washington, D.C. 20006; Institute of Mathematical Statistics, University of North Carolina, Chapel Hill, North Carolina; American Mathematical Society, 190 Hope Street, Providence 6, Rhode Island; Mathematical Association of America, University of Buffalo, Buffalo 14, New York; The Biometric Society, 6804 40th Avenue, University Park, Hyattsville, Maryland 20782.

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# *Employment Information Series*

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September - 1967

STENOGRAPHER
202.388-014

NATURE OF THE WORK  A stenographer takes dictation of reports, correspondence and other records in shorthand or on a stenotype-machine and transcribes her notes on a typewriter. She may transcribe information from a sound producing record and do straight typing. Other duties may include sorting and distributing mail, answering telephones, operating a switchboard, filing, compiling records, computing payrolls, and operating various office machines. A "specialized" stenographer is required to have a specific knowledge of technical terms used in a particular profession-medical or legal stenographer for example.

EMPLOYMENT OUTLOOK  There has been a substantial shortage of qualified stenographers in the State of Ohio in recent years. Many employers are willing to train applicants for specific knowledge and skills.

The number of stenographic jobs is growing steadily. The need for stenographers will continue to grow for the next few years with the expansion of governmental and business activities. Women predominate in this field. Opportunities do exist for men in environments less attractive to women as sometimes occurs in manufacturing, wholesale, trucking, and construction firms.

FIELDS OF EMPLOYMENT  Stenographers are employed in federal, state, county, and municipal governmental agencies; industrial, sales, and commercial establishments: professional offices; educational institutions; trade and labor organizations; utilities; financial institutions; hotels, hospitals and churches.

REMUNERATION  The salary is influenced by the size and nature of the business establishment, responsibilities of the job, skills and knowledges required, and the size of the community. The beginning salary for stenographers in Ohio ranges from $300 to $350 per month. An experienced stenographer's average salary ranges from $350 to $450 per month. The beginning salary for stenographers classified under state civil service is $300 to $350 per month. Stenographers associated with the federal civil service currently start at $4,200 to $4,500 a year. Most stenographers are employed in establishments that provide extra benefits for their employees. These benefits may include life insurance, paid vacations, retirement benefits, medical and surgical insurance. Salaries vary because of location and type of industry and because of difference in experience.

REQUIREMENTS FOR ENTRY

General  Personal qualifications should include a pleasant personality, ability to meet and work with people, neat clean personal appearance, memory for details, efficient work habits, adaptability, promptness, patience, dependability, and the ability to concentrate.

Training  Most employers require high school graduation, and satisfactory completion of a business course in high school, junior college or business school. Thorough instruction in typing and shorthand, business practices and procedures, filing, business English, and operation of office machines is usually required. Junior college or university training is sometimes preferred, especially for positions which have promotional possibilities.

Knowledge and Skills A stenographer should possess a thorough knowledge of spelling, punctuation, and grammar; the ability to memorize details and do simple arithmetic; to find materials in files quickly and easily; to type at least 40 net words per minute and take dictation at a rate of at least 80 words per minute.

WORKING CONDITIONS A stenographer generally works in pleasant, well lighted and ventilated surroundings. Stenographers in private industry usually work a 5-day week of 38 to 40 hours, and may sometimes be called upon to work additional hours. Stenographers may work alone or around others, depending upon the size of the establishment. Duties are more varied in small offices. Eye strain as a result of continual reading and transcribing is possible.

AVENUES OF PROMOTION Most workers start as typists or junior stenographers and may be promoted from a stenographic position to secretary, office manager, or administrative assistant. With additional training, a stenographer may specialize as a medical, legal or public stenographer or as a court reporter. Advancement in private industry is based upon training, work experience, knowledge of the job, supervisory ability and tenure. In governmental agencies, promotion may be by examination.

FOR ADDITIONAL INFORMATION Contact: The Ohio State Employment Service Office in your community; U.S. Civil Service Commission, Post Office Building, 85 Marconi, Columbus, Ohio 43215; local business colleges.

NOTES:

(Local openings, person to contact, current pay rate, and training opportunities.)

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# EMPLOYMENT INFORMATION SERIES

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## OCCUPATIONAL RELEASE

## STONEMASON
861.781-022

July,
1960

NATURE OF WORK - Builds the stone exterior of structures. Works primarily with two types of stones--natural cut stone, such as marble, granite, or sandstone; and artificial stone which is made to order for industrial buildings. Uses the same skills and techniques whether working with natural cut stone or artificial stone... Much of the work is the setting of natural cut stone for comparatively expensive buildings such as offices, hotels, churches, and public buildings. Works from a set of drawings in which each stone has been numbered for identification purposes, except where every piece is identical. A helper or derrickman locates the pieces needed and brings them to the mason; larger stones are set in place with a hoist. The stonemason sets the stone in mortar and moves it into final position with a mallet, hammer, or crowbar. Alines the stone with a plumb line and finishes the joints between the stones with a pointing trowel.May fasten the stone to supports with metal ties or anchors... Occasionally, may have to cut stone to size. To do this, must determine the grain of the stone selected and strike blows along a predetermined line with a stonemason's hammer. More valuable stones are cut with an abrasive saw to make them fit.

Also does some stone veneer work, in which a thin covering of cut stone is applied to the exterior surfaces of a building. In one specialized branch of the trade known as alberene stone setting, sets acid-resistant soapstone linings for vats, tanks, and floors... Principal handtools are heavy hammers, wooden mallets, and chisels.For rapid stone cutting, pneumatic tools are used, such as pneumatic hammers, pneumatic drills, and brushing tools. Special power tools are used for smoothing the surface of large stones. For cutting, an abrasive saw is used on mortar and sandstone.

OPPORTUNITIES - Nationally, little increase in the employment of stonemasons is expected during the 1960's, despite the anticipated large expansion in new building construction. Less use of stone masonry work is expected, because modern architectural design has emphasized simpler lines, less ornamentation, and larger window areas. Replacement needs will provide a small number of job opportunities for new workers each year in this relatively small building trade. For up-to-date information on local conditions, contact unions, contractors, and local offices of the Ohio State Employment Service.

FIELDS OF EMPLOYMENT - Most stonemasons work on new building construction, particularly on the more expensive residential and commercial buildings. A few work for government agencies or business establishments which do their own construction and alteration work.

AREAS OF EMPLOYMENT - Journeymen stonemasons are employed mainly in the larger urban areas. In many areas where there are no stonemasons, the work is performed by bricklayers who can do masonry work.

REMUNERATION - A 1958 survey of minimum union wages in 52 large cities shows an average of $3.77 an hour. Weather conditions and brief duration of jobs limit annual earnings.

METHOD OF ENTRY - Most authorities recommend completion of a 3-year apprenticeship program. However, a substantial proportion of stonemasons have picked up the trade by working several years as helpers, observing or being taught by experienced stonemasons.

REQUIREMENTS FOR ENTRY - Apprenticeship applicants generally are required to be between the ages of 17 and 24, and a high school education or its equivalent is desirable. Good physical condition is an important asset.

Training - The apprentice learns the use and handling of the tools, machines, and materials of the trade. He also learns how to lay out and install walls, floors, stairs and arches; and how to work with the various kinds of natural and artificial stone.

Union membership - A large proportion of stonemasons are members of the Bricklayers, Masons, and Plasterers International Union of America.

WORKING CONDITIONS AND HAZARDS - Most stonemasonry work is done outdoors. The work of the stonemason is active and sometimes even strenuous, as it involves lifting moderately heavy materials.

ADDITIONAL INFORMATION - Local contractors, unions, Ohio State Employment Service local offices.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT INFORMATION SERIES

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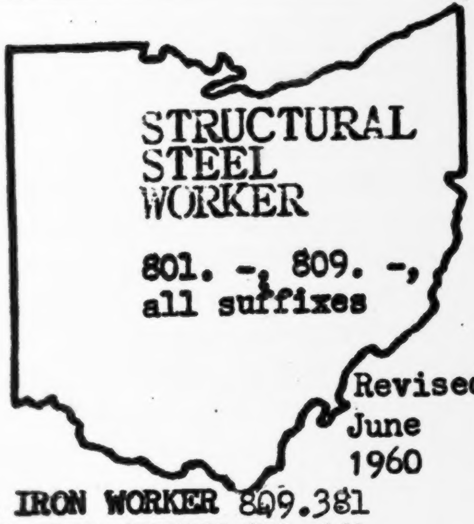

## STRUCTURAL STEEL WORKER

801. -, 809. -,
all suffixes

Revised
June
1960

## OCCUPATIONAL RELEASE

ORNAMENTAL IRON WORKER 809.381
REINFORCING IRON WORKER 801.884

NATURE OF THE WORK - Erect, assemble, or install fabricated structural metal products in the construction of industrial, commercial, and large residential buildings. Although these are distinct trades, many craftsmen do the work of all three. Structural Iron Workers erect the steel framework of bridges, buildings and other structures including metal storage tanks, and overhead crane runways that support heavy equipment. Install steel floor decking and vault doors and their frames. In erecting a steel framework or structure, take the steel shapes already fabricated in shops by other workers and hoist them into place in the proper order. Next, temporarily connect all the steel shapes with bolts, accurately aline the structure, and rivet or weld the parts. In the construction of a large building, workers generally do not perform all of these operations. Instead, separate gangs perform a particular operation, such as riveting.

Ornamental Iron Workers install metal stairways, catwalks, floor gratings, and iron ladders, such as those used extensively in powerhouse and chemical plants, as well as metal window sash and doors, grills, and screens (like those used in bank tellers' compartments and elevators), metal cabinets, and safety deposit boxes. Also install decorative ironwork on balconies, lampposts, gates and fences. Also work with aluminum alloy, brass, and bronze metal shapes which have been fabricated in a factory or shop. Fasten these metal products permanently to a building or other structure by bolting, setting in concrete, or welding.

Reinforcing-Iron Workers (rodmen) set steel bars in concrete forms to reinforce the concrete structures. Place steel bars on suitable supports in the concrete form, and tie bars together at intersections, so that each bar receives its intended structural load. Place bars in concrete form according to blueprints, specifications, or verbal instructions. Use steel pliers and other tying tools to wire rods securely in place. Some concrete reinforcing is in the form of coarse mesh made of heavy steel wires. When using mesh, rodmen measure the surface to be covered, cut and bend the mesh to the desired shape, place the mesh over the area to be reinforced, and hammer it into place.

OPPORTUNITIES

Current - On a national scale the growth of the employment and the need for new workers to replace those who die, retire, or leave the trade are creating several thousand openings annually. However, local conditions vary widely, the number of apprentices accepted yearly tends to remain static, and up-to-date information should be obtained from local unions, contractors, and the Ohio State Employment Service.

Trends - The large expansion of construction activity and the increased use of structural steel in smaller buildings points to a continued rise in employment for all three occupations.

# STRUCTURAL STEEL WORKER

FIELDS OF EMPLOYMENT - Principal employment is in new industrial and commercial construction work. Some alteration work and repair work also exist. Some highly skilled structural steel workers transfer to jobs in structural steel fabricating shops. Most of these craftsmen are employed by general contractors on large building projects or steel erection, or by ornamental-iron contractors. Steel companies or their subsidiaries engaged in bridge, dam and large building construction also employ a substantial number. Government agencies, public utilities or large industrial establishments account for a small proportion of workers. Few are self employed.

AREAS OF EMPLOYMENT - Nationwide with greatest concentrations in highly populated and industrial centers.

REMUNERATION - A 1958 survey of 52 large cities showed structural iron workers and ornamental iron workers averaging $3.62 per hour. Reinforcing iron workers were averaging $3.51 per hour. The 1960 union wage for iron workers in a representative Ohio area is $3.70 per hour. Much working time is lost because of weather. Rodmen are out of work intermittently because their jobs last only a few days. Considerable overtime at premium rates may augment ironworkers' earnings. The starting apprentice rate is usually 50% of the journeyman rate.

METHOD OF ENTRY - Authorities recommend a 2 year apprenticeship. A few workers with several years experience as helpers have become journeyman, but this method has been more difficult in recent years.

REQUIREMENTS FOR ENTRY - Apprenticeship applicants are required to be between the ages of 17 and 30, and in good physical condition. A high school education or its equivalent is desirable.

Training - During 2 year apprenticeship learns how to use, care for, and handle safely the tools, machines, equipment, and materials commonly used in the trade; learns how to read blueprints and working drawings; learns how to form, shape, drill, tap, erect and assemble various metal structures; learns how to lay stairs, fire escapes, grills, railings, fences, doors, and related metal structures; learns arc and gas welding; gas cutting, bolting, and riveting; and how to repair and alter metal structures. In addition, the apprenticeship program includes a minimum of 144 hours a year of related classroom instruction in subjects such as drafting, blueprint reading, and mathematics applicable to layout work.

Union membership - A large proportion of workers in these trades are members of the International Association of Bridge, Structural and Ornamental Iron Workers.

WORKING CONDITIONS AND HAZARDS - Since the materials used in the structural metal trades are heavy and bulky, above average physical strength and ability are necessary. A good sense of balance is also required because some of the structural work is done at great heights and on narrow footings. Structural iron work is insufficient to keep a large structural steel contractor or local crew constantly employed. Workers must be brought in from outside the area to handle the occasional large construction projects. The use of many safety devices such as nets and scaffolding has reduced the frequency of accidents in recent years, yet the work still has a higher rate of accidents than for the contract construction industry as a whole.

ADDITIONAL INFORMATION - Local contractors, unions, Ohio State Employment Service.

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

TAILOR
WOMEN'S GARMENT
ALTERATION

785.281-010
785.381-026

Revised
October
1963

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Alters garment for proper fit and repairs worn apparel. Discusses cost of services, extent and result of alterations, and nature of repairs with the customer. Will perform the following activities in the alteration o repair of the garment: Determines the amount of sewing to be done on a garment in a retail store by reading the alteration ticket, observing alteration marks chalked on the garment by fitter, or discussing alteration with the fitter. In other establishments may try garment on the customer to check the fit, and mark adjustments with chalk or pins. Cuts seams of material with scissors, razor blade, or seam ripper. May remove excess material where necessary. Follows instructions on the alteration tag, chalk marks, or pins on garment to alter sections and hems, and resews them in the correct position by hand or machine. May press the altered garment with an iron to remove wrinkles and flatten seams. May also make new pieces, mend tears or worn places, and replace buttons and accessories.

OPPORTUNITIES

Current - Opportunities for entry are limited; however, there is a need to replace those who die, retire, are promoted, or leave the occupation for other reasons. The majority of openings are filled by promotions within the company, with the exception of beginning occupations.

Trends - The need for alteration workers is increasing slightly each year as a result of the following factors: a) the growth in population; b) the expansion of white collar positions with the resultant increase in the number of apparel purchases; c) the increasing number of retail clothing sales resulting from the expanding economy; d) the opening of new retail clothing stores, and e) the additional number of working women, particularly those in secretarial and other clerical positions that require "dressing up".

FIELDS AND AREAS OF EMPLOYMENT - Can obtain employment in almost every community. Alteration departments of retail clothing and department stores employ the largest number of workers in this field. Some find employment in dry cleaning establishments. A few may obtain employment in custom dressmaking or style garment shops and laundries. May operate own establishment.

REMUNERATION - The wages of individual alteration workers will vary with geographical location, employer, experience, and individual ability. The average starting salary for inexperienced alteration workers employed by retail clothing or department stores is $1.15 per hour. Most dry cleaning establishments start their employees at $1.15 per hour. With experience they can expect to earn $1.75 per hour. Workers assuming duties of a supervisory nature will earn more. Additional benefits usually include paid vacations, sick leave, hospitalization and retirement plans.

## REQUIREMENTS FOR ENTRY

**General** - Should possess initiative, patience, perseverance, a pleasant personality, an attitude of cooperativeness, an interest in this type of work, orderliness, and the ability to deal with people tactfully. Good health, eye-hand coordination, finger dexterity, good vision, color discrimination, and the ability to understand the principles of dressmaking are important for successful employment in this field.

**Education and Training** - The minimum educational requirement is usually high school graduation; however, this requirement may be waived in cases where the individual shows interest and ability. Home economics courses in high school or vocational training in basic dressmaking, designing, and tailoring will be helpful to anyone seeking employment in this field. Many employers provide on-the-job training to teach knowledges and skills necessary for the performance of duties. This training period may extend over a period of from one to two years.

**WORKING CONDITIONS** - The majority work an eight hour day, five day week. Since spring and fall are busy seasons for workers in retail clothing stores, they may be required to work a few evenings during the week at this time of year. Possible occupational hazards include: eyestrain, pricking with needles and pins, cuts from scissors, and burns from ironing apparatus.

**AVENUES OF PROMOTION** - Will begin as presser, hemstitching machine operator,mender, dressmaking courses; alterations department of retail clothing and department store; local offices of the Ohio State Employment Service; and local public or school librarian for a listing of books and articles on this subject.

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed**
**by the**
**Counseling Section**
**Ohio State Employment Service**

## TAXI DRIVER

913.463-018

Revised
January
1961

## OCCUPATIONAL RELEASE

NATURE OF WORK - Operates a motor vehicle to transport passengers from one point to another for a stipulated sum based on length of time taken and mileage as recorded on a taxi meter, or on a flat rate basis. May assist passengers with luggage, and pick up and deliver packages.

Picks up "fares" or passengers according to information received by two-way radio, by cruising on streets to or from business area or along transportation routes, by cab stand telephone to central office, or may wait in front of theaters, hotels, railroad stations, and other buildings from which large numbers of prospective passengers may emerge. In small cities and suburban areas may work from a central location, such as a terminal. May pick up passengers while returning to cab stand after transporting passenger.

Usually required to keep records--date, time, and place passengers are picked up, and destination, time of arrival, and fare. May clean cab periodically if owning or renting it. Most large cab companies employ cab cleaning personnel.

OPPORTUNITIES

Current - Good, because of high turnover rate. This rate results from lack of assurance of steady income in some cases, long hours, and the use of this job by some workers as stopgap employment when better jobs are not available. There are also opportunities for part-time work--college students and those holding down two jobs are among those who take advantage of this.

Trends - The level of employment of full-time taxi drivers is not expected to increase to any great extent during the 1960's. In the past, employment has been adversely affected by the increased use of automobiles, rented cars, and the continuing population shift to the suburbs. Recent years have seen the employment level stabilized. Utilization of taxicabs is expected to increase because of increased population, higher consumer incomes, parking difficulties, and the higher local bus and street car fares.

For Women - Opportunities vary with individual cab company policy.However, women are performing satisfactorily in many cities in Ohio.They are prohibited by State law from working between the hours of 9PM and 6AM.

FIELDS OF EMPLOYMENT - Taxicab companies, self-employment.

AREAS OF EMPLOYMENT - Every metropolitan area in Ohio with the greatest concentration of drivers in large cities.

REMUNERATION - Average weekly earnings including tips in 1958 in large Mid-west and East Coast cities--$60-$100 for a 6 day week. Most drivers are paid a percentage--usually 40-50% of the total fare and income may be supplemented by tips. Some companies pay a salary plus commission on the volume of business done. A few companies guarantee minimum daily or weekly earnings. Some drivers owning taxicabs rent them by the day for a set price, keeping any receipts above this figure.

ENTRY METHODS AND REQUIREMENTS - In general, applicants must be over 21, in good health, have a good driving record, and have no criminal record (some exceptions made in the case of minor violations). Although formal education is seldom required, many companies prefer that applicants have at least an 8th grade education. A neat, well-groomed appearance is desirable, as is the ability to deal tactfully and courteously with all types of people. Good foot, hand, and eye coordination are desirable to operate cabs in fast-moving and heavy traffic.

In addition to a State-issued chauffeur's license, most large cities require a special taxicab operator's license issued by the local police or safety department, or Public Utilities Commission. The examination for this license may include questions on street locations, insurance regulations, accident reports, lost articles, zoning or meter rules, and passenger pickup and delivery.

Unions - When unionized, usually belong to the International Brotherhood of Teamsters, Chauffeurs, Warehousemen, and Helpers of America (Independent).

WORKING CONDITIONS - A large percentage of full-time taxi drivers work 9 or 10 hours a day, 6 days a week, with no overtime pay. Nervous tension may result from heavy traffic and dealing with passengers who differ markedly in their personalities.

AVENUES OF PROMOTION - Limited, with promotion to the job of dispatcher, or in office or garage work possible. Some drivers have become road supervisors, garage superintendents, or claims agents. Many drivers try to purchase their own cabs so they can become their own employers. However, in some large cities, the number of taxicabs is restricted by ordinance, which may limit the opportunity to own cabs in such areas.

SOURCES OF ADDITIONAL INFORMATION - Local taxicab companies.

NOTES - (Local opportunities, wages, etc.)

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: January 1968

TEACHER
KINDERGARTEN 092.228
ELEMENTARY 092.228

**NATURE OF THE WORK** Kindergarten teachers conduct programs of education for young children. Most frequently, they divide the school day between two groups, teaching two different classes a day. Some, however, may work with one group all day. The kindergarten program provides children with experience in play, music, artwork, stories, and poetry. It also introduces them to science, numbers, language, and social studies. After school hours, kindergarten teachers may plan the next day's work, study and prepare the children's school records, confer with parents or professional personnel concerning individual children, participate in teachers' in-service activities, and locate and become familiar with teaching resources.

Elementary school teachers usually work with one group of pupils during the entire school day, teaching several subjects and supervising various activities, such as lunch and play periods. In some school systems, however, teachers in the upper elementary grades may teach several groups of children one or two subjects only. Many school systems also employ special teachers to give instruction and to assist classroom teachers in certain subjects, such as art, music, physical education, industrial arts, foreign languages, and homemaking. Teachers in schools with only a few students, largely in rural areas, may be required to teach subjects in several grades.

**EMPLOYMENT OUTLOOK** Young people preparing to teach in elementary schools will find a large number of teaching opportunities available. There are over 80,000 teachers employed in Ohio at the present time (1967). The annual turnover ranges from a minimum of 10% to perhaps 30% for the larger districts. There are opportunities for employment in every district. Since the retirement dates have been liberalized, job opportunities also open at mid-year.

With the advent of such programs as the National Teachers Corps and the Community Service and Continuing Education Program under Titles V(B) and I respectively of the Higher Education Act of 1965, of Head Start and V.I.S.T.A. under Titles II and VII respectively of the Economic Opportunity Act of 1964, and the Adult Basic Education program under Title III of the 1966 Adult Education Act to mention only a few, many new opportunities have been created for regular classroom and special teachers. This list by no means represents the entirety of programs available. For information regarding the complete listing of these programs, contact the State Department of Education and the Ohio Office of Economic Opportunity (see addresses under "Sources of Additional Information"). In addition, accommodating the increasing population will continue to offer new teaching positions.

REMUNERATION The average salary for classroom teachers was $6518 during 1966-67 school year. Beginning teachers may start at a salary of $5200 to $6000. Employment in teaching is steady, and usually not affected by changes in business conditions. Some states have tenure provisions which protect teachers from arbitrary dismissal. Pension and sick leave plans are common, and a growing number of school systems grant other types of leave with pay.

## REQUIREMENTS FOR ENTRY

General The ability to understand and enjoy children and adults, leadership qualities, good intellectual capacity, the ability to speak fluently and accurately with a pleasant voice, good planning and organizational ability, mental alertness and good physical health are the qualifications necessary to succeed in elementary education.

Training Graduation from a four-year college curriculum including a specified number of required education courses and supervised experience as a student teacher is required. During the first two years, the college course is based on a general background in English language and literature, social studies, science, psychology, and principles and history of education. The last two years include intensive training in all fields pertaining to elementary school subjects with courses in methods of teaching and a certain amount of time spent in practice teaching in an elementary school.

Certification Graduates who have completed the required curriculum in elementary education are entitled to the four-year provisional elementary certificate. Temporary certificates may be issued to those persons with less training, in times of emergency.

Two kinds of certificates for teaching in the Ohio public elementary schools are available to the graduate of an approved curriculum. One is valid for Grades 1 to 8 in elementary schools. The other certificate for Kindergarten-Primary is valid for teaching in Kindergarten and in Grades 1 to 3. A student desiring the Kindergarten-Primary certificate is required to do his student teaching on the kindergarten or primary level, and to take kindergarten methods courses.

WORKING CONDITIONS Although the time spent in the classroom is usually less than the average working day in most other occupations, the elementary school teacher must spend additional time each day planning work, preparing instructional materials, developing tests, checking papers, making out reports, and keeping records. Conferences with parents, meetings with school supervisors, and other professional activities also frequently occur after classroom hours. Since most schools are in session less than 12 months a year, teachers often work at other jobs or take courses for professional growth during the summer.

AVENUES OF PROMOTION Elementary school teachers may advance to positions as consultants, assistant principals, principals and superintendents. The usual basis of promotion is work experience, supervisory ability, and graduate training.

SOURCES OF ADDITIONAL INFORMATION Contact: The State Department of Education, State Office Building, Columbus, Ohio; The Ohio Education Association, 225 East Broad Street, Columbus, Ohio; any teacher training institution.

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145 South Front Street
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BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

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# TEACHER,
# SECONDARY SCHOOL
## 091.228

NATURE OF THE WORK  Secondary school teachers, those employed in junior and senior high schools, usually specialize in a particular subject (English, science, mathematics, art, music, etc.). They teach several classes each day in their main subject, in related subjects, or in both. In addition to giving classroom instruction, secondary school teachers develop and plan teaching materials, develop and correct tests, keep records, make out reports, consult with parents, supervise study halls, and perform other related duties. Many supervise student activities such as clubs and social affairs during and after regular school hours. Maintaining good relations with parents, the community, and fellow teachers is an important aspect of this job.

EMPLOYMENT OUTLOOK  Young people preparing to teach in secondary schools will find a large number of teaching opportunities available in every Ohio locality. There are over 80,000 teachers employed in Ohio at the present time (1967). The annual turnover ranges from a minimum of 10% to perhaps 30% for the larger districts. Since the retirement dates have been liberalized, job opportunities open at mid-year as well as at the beginning of each school year.

With the advent of such programs as the National Teachers Corps and the Community Service and Continuing Education Program under Titles V(B) and I respectively of the Higher Education Act of 1965, of Head Start and V.I.S.T.A. under Titles II and VII respectively of the Economic Opportunity Act of 1964, and the Adult Basic Education program under Title III of the 1966 Adult Education Act to mention only a few, many new opportunities have been created for regular classroom and special teachers. This list by no means represents the entirety of programs available. For information regarding the complete listing of these programs, contact the State Department of Education and the Ohio Office of Economic Opportunity (see addresses under "Sources of Additional Information"). In addition, accommodating the increasing population will continue to offer new teaching positions.

REMUNERATION  The average salary for all (new and experienced) classroom teachers is $6518 (1967). Beginning teachers may start at a salary of $5200 to $6000. Employment in teaching is steady and usually not affected by changes in business conditions. Some states have provisions which protect teachers from arbitrary dismissal. Pension and sick leave plans are common. A growing number of school systems grant other types of leave with pay.

## REQUIREMENTS FOR ENTRY

General Perhaps the most important personal qualification for secondary school teachers is an appreciation for and an understanding of adolescent children. Patience, self-discipline, and high standards of personal conduct are desirable traits. In addition, an enthusiasm for the subjects taught and a broad knowledge and appreciation of the arts, the sciences, history, and literature are also desirable.

Training College students preparing for secondary school teaching generally devote about one-third of their four-year curriculum to their major, which may be in a single subject or in a group of related subjects. About one-sixth of the time is spent in education courses learning about children, the place of the school in the community, and materials and methods of instruction including student teaching in an actual school situation ( a 10 to 18 week practical experience). The remaining time is devoted to general or liberal arts courses.

Certification Certification is required for public secondary school teaching. To qualify for this certificate, the prospective teacher must have a Bachelor's degree.

Although certification requirements vary among the states, the person who is well-prepared for secondary school teaching in one state usually has little trouble meeting requirements in another state. A well-qualified teacher can ordinarily obtain temporary certification in a state while he prepares to meet its additional requirements.

Many states require the secondary school teacher to obtain a Master's degree within a given period of time. Although Ohio has no such provision at the present time, the trend in education is moving in this direction. Most school systems give preference to candidates holding advanced degrees.

WORKING CONDITIONS The school building and classrooms, generally clean, well-lighted, and well-ventilated, offer a pleasant environment. The teacher may supervise outdoor activities or projects away from school premises. There is contact with children and parents in addition to a position of prestige and respect in the community. The two and one half to three month summer vacation period allows for extended travel, additional study, pursuit of hobbies, or for interesting work in another field.

AVENUES OF PROMOTION Advancement to such positions as consultant, department head, principal, or superintendent is possible. The usual basis for promotion is work experience, supervisory ability, and/or graduate training.

SOURCES OF ADDITIONAL INFORMATION Contact: The State Department of Education, 612 Ohio Departments Building; The Ohio Education Association, 225 East Broad Street, Columbus, Ohio; The Ohio Office of Economic Opportunity, Ohio Departments Building, 65 South Front Street, Columbus, Ohio, 43215; any teacher training institution.

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Ohio Bureau of Employment Services
145 South Front Street
Columbus, Ohio 43216

# Employment Information Series

Revised
September - 1967

TEACHER, VOCATIONAL AGRICULTURE
097.228-018 (INSTRUCTOR, VOCATIONAL TRAINING)

NATURE OF THE WORK The vocational agriculture teacher provides practical agricultural instructions related to the needs of high school students as well as young and adult farmers. In this program students prepare for occupations in farming and production agriculture as well as off-farm agricultural occupations requiring a knowledge of agriculture. The curriculum includes the production and management of crops and livestock in the geographic area. It helps the students to develop the skills and abilities necessary for agricultural production through the development of individual crop and livestock projects which are supervised by the teacher. The teacher provides instruction in the basic fundamentals of agricultural science by relating these principles to specific farming programs. He gives instruction in crops, soils, farm mechanization, livestock, agricultural economics, finance, conservation and marketing. The teacher supervises field trips to farms, processing plants and marketing facilities. He also serves as adviser to the local chapter of the Future Farmers of America. He conducts out-of-school programs for young and adult farmers based upon the needs and interests of those enrolled. He provides formal classroom and individual on-the-farm instruction, and participates in general school activities along with the rest of the faculty.

EMPLOYMENT OUTLOOK It is anticipated that this field will continue at a high level during the next decade. A national study shows that supervisors indicate a 30 per cent increase anticipated for the next ten years. Institutes for training agricultural technicians in post high school programs are also in operation and will require additional teachers.

FIELDS OF EMPLOYMENT High Schools throughout the state are employers. An attempt is made to match vacancies with the interests and abilities of new teachers. After several years of experience teachers may enter college teaching, agricultural extension, soil conservation and other farm-related occupations.

REMUNERATION The starting salary for teachers with a Bachelor's Degree is approximately $7,000 per year. Additional funds are provided for travel incurred in the schools vocational program. Experienced teachers will average approximately $8,700 per year. With advanced training they may make up to $12,000 per year. Additional benefits include sick leave and membership in the Ohio Teachers Retirement System.

REQUIREMENTS FOR ENTRY

General Those interested in becoming teachers should have farm experience and scholastic ability. They should have the interest and aptitude necessary for success in working with young people. They should also have leadership ability, emotional stability, and the ability to work with different types of people. A pleasing personality and a cooperating attitude are invaluable traits. Other characteristics should include patience and understanding, a sense of humor and imagination, resourcefulness and an enthusiasm for this work.

Education and Training  Teachers must satisfactorily complete a four-year curriculum in a state agricultural college, with at least 30 credit hours in professional education to qualify for a four-year provisional teaching certificate. Ohio State University is the only school in Ohio offering approved training in agricultural education. Among the subjects the agricultural education major will study in college are agricultural economics, agricultural engineering, agronomy, animal science, dairy science, horticulture, teaching methods, and principles of extension and program development. Courses in vocational agriculture are offered in the summer months to assist teachers in keeping up to date and to advance professionally.

Certification  Graduates completing the required curriculum in agricultural education at Ohio State University may apply for the four-year provisional vocational education certificate. Graduates receiving training in other states may apply for a temporary vocational education certificate to teach in Ohio. Contact the Division of Teacher Education and Certification, State Department of Education, State of Ohio to make application for certification and to obtain additional information.

WORKING CONDITIONS  Teachers are employed on a 12-month basis starting July 1. They serve twelve, four-week periods with four weeks of vacation. Much time is spent out-of-doors and in the country working with students, as well as young and adult farmers. Teachers make farm visits, give demonstrations and attend in-service education meetings.

AVENUES OF PROMOTION  Teachers may advance along the following lines with additional educational degrees: Teacher - Head of Department - Principal - Superintendent.

SOURCES FOR ADDITIONAL INFORMATION  Write or contact local vocational agriculture teacher at the Department of Agricultural Education at the Ohio State University, 2120 Fyffe Road, or the Agricultural Section, Division of Vocational Education, State Department of Education, 65 South Front Street, Columbus, Ohio, 43215.

Notes:

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# EMPLOYMENT INFORMATION SERIES

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TECHNICIANS IN
RADIO (TELEVISION)
BROADCASTING
003. 187-062
RADIO OPERATOR
003. 187-066

April
1960

## OCCUPATIONAL RELEASE

**NATURE OF THE WORK** - Technicians in broadcasting stations service the electronic equipment which transmits the sounds and pictures from the studio to the air. These workers, called broadcast, transmitter, studio, maintenance, or recording technicians operate the transmitters, read transmitter meters, and compile written records. They operate television cameras, microphones, sound recording, sound effects, and motion picture projection equipment. Other duties include the operation and maintenance of the studio's electronic equipment and the setting up of equipment for remote pickups. In addition, operation of the transmitter requires the ability to monitor and adjust the output levels and frequency of the outgoing broadcast.

The tasks of the broadcast technician which require the most knowledge are those of setting up, maintaining and repairing the intricate electronic equipment in the station. Picking up the sounds and pictures in the broadcasting stations, converting them into electrical impulses, and getting the signal to the transmitters is done by means of microphones, video cameras, cables, and other electronic transmission and amplification equipment. When trouble develops in any of this equipment, the technician repairs it and puts it back into operation.Most large radio and television stations employ one or two experienced maintenance technicians whose chief duties are to repair and service equipment under supervision of the chief engineer or his assistant.

When events taking place outside the studios are be broadcast, technicians go to the site of the pickup and set up the necessary equipment. They test the equipment after it has been installed and then stand by to make emergency repairs. After the broadcast, they dismantle the equipment and return to the station.

Supervisory personnel with job titles such as chief engineer, assistant chief engineer, director of engineering and supervisory technician, also do technical work in the engineering departments.These personnel supervise the operation, maintenance, and repair of all electronic equipment in the studio and at the transmitter. In small radio stations, they frequently do all the maintenance and repair work themselves. Supervisory personnel may also design and build new equipment, purchase equipment for the station, and help lay out plans for building new studios and towers. Many are broadcast technicians who have worked their way up to supervisory positions--some have academic degrees in engineering.

**OPPORTUNITIES**

**Current** - A slight increase is expected in the 1960's--due to replacement needs and additional new stations.

**Trends** - The introduction of color television will increase the need for technicians to a slight degree--particularly during its first few years of maintenance. Offsetting this demand so far as growth of the occupation is concerned are the introduction of automatic equipment such as automatic switching and programming devices, remote control of transmitters, and magnetic video tape machines.

For women - Extremely little or no opportunity in most cases.

AREAS OF EMPLOYMENT - Large stations in metropolitan areas employ the majority of broadcast technicians. The highest paying and more specialized jobs are concentrated in New York, Los Angeles, Washington, D. C. and Chicago.

REMUNERATION - Broadcast technicians are a relatively well-paid group of skilled workers. Their earnings vary greatly with the size of the station and the community. In 1958 beginning salaries ranged from $50 to $75 a week in small stations, and experienced men earned from about $80 a week in small towns to more than $150 in large cities. $185 a week and more was common with networks and large stations, and for supervisory technicians, below the rank of chief engineer,$200 and more per week was common.

METHOD OF AND REQUIREMENTS FOR ENTRY - A young man interested in becoming a broadcast technician should plan on getting a Radio Telephone Operator License First Class from the Federal Communications Commission. Many stations require all their broadcast technicians, including those who do not operate transmitters, to have this license. License applicants must pass a series of written examinations covering the construction and operation of transmission and receiving equipment, the characteristics of electromagnetic waves, and Government and International regulations and practices governing broadcasting. Information about these examinations and guides to studying for them, may be obtained from the Federal Communications Commission, Washington 25, D. C.

Young men with FCC licenses who are hired in entry jobs at large stations are instructed and advised by the Chief Engineer or other experienced technicians concerning the work procedures at the station. In small stations, they may start by operating the transmitter and handling other technical duties after a brief instruction period. As they acquire more experience and skill, they are assigned to more responsible jobs. Men who demonstrate above average ability may move into the top level positions, such as supervisory technician and chief engineer.

Unions - Unions in the broadcast field are most active in network centers and large stations. Three unions which represent technicians are the National Association of Broadcast Employes and Technicians, the International Brotherhood of Electrical Workers, and the International Alliance of Theatrical Stage Employees and Moving Picture Machine Operators.

WORKING CONDITIONS - Most technicians in large stations work a 40 hour week, with overtime pay rates for work beyond 40 hours. In small stations, technicians often work 2, 4, or 8 hours of overtime each week on a regular basis. Evenings, night and weekend work occurs frequently since some stations are on the air as many as 24 hours a day, 7 days a week. Also, maintenance work done while station is off the air requires night-time and week-end shifts which may be compensated for by shorter hours or higher pay. Broadcast technicians generally work indoors in pleasant surroundings.

SOURCES FOR ADDITIONAL INFORMATION - Local stations, Federal Communications Commission, Broadcasting-Telecasting magazine, (also contains help-wanted ads) Radio Annual, Television Yearbook, Electronics magazine.

NOTES - (Local opportunities, wages, etc.)

# EMPLOYMENT
# INFORMATION
# SERIES

**Prepared and distributed
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Ohio State Employment Service**

TELEVISION SERVICE
AND REPAIRMAN
720.281-018

RADIO REPAIRMAN
720.281-010

Revised
Feb.
1961

## OCCUPATIONAL RELEASE

NATURE OF WORK - Analyzes and tests home radio and television receivers requiring repairs to determine the location and nature of the trouble.May use test equipment such as oscilloscopes, signal generators, voltmeters, and ohmmeters to trace and measure the flow of current through the various components in the circuits. When locating improperly working part or circuit, makes necessary repairs. Replaces wornout tubes, condensers, resistors, and other parts, using electricians' handtools--pliers, screwdrivers, wrenches, and soldering gear. After making repairs, adjusts equipment to proper operating condition. Makes most major repairs on radio and television sets in the shop; minor repairs and adjustments are usually made in customers' homes. May also install television set. Servicing may be divided into outside work (field service) and bench work (shop repairing).

OPPORTUNITIES

Current - Listed as a "demand occupation" by the U. S. Department of Labor.

Trends - Moderate increase expected during this decade. The trend toward 2 and 3 set homes will increase the demand for servicemen.Color television's impact on service needs will probably be greatest during this decade, leveling off in later years as improvements in design simplify construction and make breakdown infrequent.

FIELDS OF EMPLOYMENT - Many service men work in 2 or 3 man repair shops, often as partners. Some are employed in large repair shops, including service branches of large manufacturing companies. Appliance stores, department stores, and other outlets selling radio and television sets also employ these workers in their service departments.

AREAS OF EMPLOYMENT - Follows the pattern of the distribution of television sets, most of which are located in the larger cities.

REMUNERATION - Beginning workers were earning $50-$60 a week in 1958. Most servicemen are averaging between $80-$130 per week.

ENTRY METHODS AND REQUIREMENTS

Selection Factors

General - Attention to detail, accuracy, mechanical aptitude, manual and finger dexterity, spatial and form perception, motor coordination, good hearing, color discrimination. Interest in working with handtools. Ability to work alone and with others, dependability.

Physical - This is generally light work and handicapped workers are acceptable for many jobs. If involved in field work, may be required to lift up to 60 pounds.

Education - High school graduation preferred, plus trade courses or on-the-job training. Helpful high school subjects include mathematics, electric shop, mechanical drawing, and physics. (See Employment Information Series, Part V, Training Directory for a list of schools offering radio and television repair training.)

WORKING CONDITIONS - Usually the work is carried on indoors in pleasant, well-lighted surroundings. For home repairs, must drive to home, carry in testing equipment and tools, and work in space available which may mean bending, stooping, squatting, etc. Physical strain is involved in carrying sets from customer's home to service truck and back again.

Hazards - Danger of falling when installing antennas on roofs. Risk of electrical shock. Cuts and bruises may be received when jerking hand out of set as a result of shock. Danger of implosion while handling picture tubes.

AVENUES OF PROMOTION - After several years' experience, may have the opportunity to open his own business. With additional training, may qualify as an electronic technician.

ADDITIONAL INFORMATION - Local radio and television repair shops. Vocational training information--U. S. Department of Health, Education and Welfare, Office of Education, Division of Vocational Education, Washington 25, D. C.

NOTES - (Local wages, Opportunities, etc.)

# EMPLOYMENT
# INFORMATION
# SERIES

Prepared and distributed
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## TOOL AND DIE MAKER

601.280-062

Sept.
1962

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## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Works from blueprints, sketches or models in constructing, remodeling, or calibrating tools, dies, jigs, fixtures, gauges and other measuring devices. Plans the sequence of operations and equipment necessary to develop each tool, fixture or die. Selects and lays out the correct metal stock, scribes the guide lines, and operates lathes, planers, grinders, drill presses, and milling machines to cut and shape the metal stock. Inspects the work after each operation with precision measuring instruments. Fits and assembles parts into a complete unit, hand finishing each piece to close tolerances. In the case of a die the piece is mounted in a press, samples are produced and checked for accuracy. May repair a tool, die, jig, fixture, or gauge; decides upon the machine and hand operations necessary to restore it to its original condition.

OPPORTUNITIES

Current - This vocation is listed as a shortage occupation in Ohio. An increasing number of tool and die makers are in demand as a result of the expansion in the metal working plants. Local information may be obtained from labor unions, contractors, Bureau of Apprenticeship representatives, and Ohio State Employment Service offices.

Trends - The outlook for the future is very good. Normal attrition of workers; steady expansion of the aircraft and missile, machinery, and metal working industries; and technological developments will create an increased need for experienced tool and die makers.

FIELDS OF EMPLOYMENT - Manufacturers of industrial, construction, and farm machinery and equipment, as well as automobile, aircraft, missile, spacecraft, and other transportation equipment employ large numbers of tool and die makers.

AREAS OF EMPLOYMENT - Nearly half of all tool and die makers are employed in Ohio, Michigan, New York, California, and Illinois. Cleveland, Chicago, Detroit, and Los Angeles are important job centers. The greatest number of tool and die makers are located in large industrial areas.

REMUNERATION - Tool and Die Maker journeyman earn between $2.60 and $3.50 an hour. The rate of pay is dependent upon the size and location of the community and the type of shop (contract or company). Apprentices generally start at 50 to 65% of the journeyman's rate of pay, and receive periodic increases after successful completion of each 1,000 hours of training until apprenticeship is completed.

Many workers are provided some type of sickness and accident insurance, pension plan, one or two weeks paid vacation and holidays.

REQUIREMENTS OF ENTRY

General - Self reliance, reliability, resourcefulness, perseverance, integrity, inventiveness, and numerical and mechanical aptitude. Ability to work to close tolerances, to develop and carry out a sequence of operations in solving a mechanical problem and follow oral or written instructions. Eye-hand coordination and form and spatial perception are necessary. Must meet the minimum standards for the trade as established by the joint apprenticeship council.

Education - Must be a high school graduate or equivalent. A four or five year apprenticeship is required to qualify as a tool and die maker journeyman. The apprenticeship program consists of on-the-job training and related classroom instruction. The apprentice receives training in such subjects as shop mathematics, blueprint reading, mechanical drawing, shop theory, and tool designing. Specific instruction is given in the characteristics of metals, layout, and use of precision measuring instruments.

Physical - Good eyesight and hearing are necessary. Job requires constant use of the eyes. Must be in good physical condition as the job requires standing, stooping, reaching, turning, pushing, pulling, and lifting up to 75 pounds.

Equipment Required - Each worker must furnish his own set of small hand tools. These are usually acquired during apprenticeship training and cost about $300.

WORKING CONDITIONS - The standard workweek is 40 hours; however, additional hours may be required during peak periods of production. The worker may get dirty or greasy while handling stock and setting up machines. The possibility of injury is slight if proper safety precautions are followed when handling tools and operating machines. Serious injury to eyes or hands can result through carelessness on the part of the operator.

AVENUES OF PROMOTION -- May be promoted from tool and die maker journeyman to tool and die layout man, leader, foreman, supervisor, sales engineer, and possibly tool designer.

FOR ADDITIONAL INFORMATION - Write or contact: Bureau of Apprenticeship representative in your area (see part V. EMPLOYMENT INFORMATION SERIES); local OSES office; local tool and die contract shops; local representatives for any of the unions listed below:

International Association of Machinists
International Union of Electrical, Radio, and Machine Workers
United Automobile Workers of America
Society of Tool and Die Craftsmen

Also contact the trade association for the contract tool and die industry;
The National Tool, Die and Precision Machining Assn., 907 Public Square
Building, Cleveland 13, Ohio.

6

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service

## TRAILER TRUCK DRIVER
904.883-014
(OVER THE ROAD)

Revised
October
1960

## OCCUPATIONAL RELEASE

**NATURE OF WORK** - Operates gasoline or diesel-powered tractor-trailers. Delivers goods, usually over long distances--frequently driving at night. Spends practically all of his working time driving. Sometimes handles the freight carried. May have to unload goods when making night deliveries to stores when no receiving crews are on hand. Drivers of long-distance moving vans generally have to load or unload their vehicles, with the assistance of helpers obtained locally.

Driving in the city, backs up big trailers to loading platforms, maneuvering trailer while driving in reverse. Must carefully judge distances since maneuverable areas on corners and in terminals may be extremely limited.

Entirely on his own for long periods of time, transporting goods and materials of great value which must be delivered safely and on time.

Inspects truck before and after runs and makes out report on condition of vehicle at end of run in accordance with Interstate Commerce Commission and Public Utility Commission of Ohio regulations. Also keeps a daily log of activities. A detailed report is required when an accident occurs.

**OPPORTUNITIES**

**Current** - Nationally, a substantial increase in this employment is expected during the 1960's.

Locally, annual tonnage and revenue increases in Ohio have generally kept abreast of national increases. Ohio is primarily an industrial State and this should mean favorable transportation growth prospects.

**Trends** - Employment should continue to rise, nationally and in Ohio, but not as rapidly as in the 1950-58 period. Limiting factors: larger carriers buying out medium-sized and smaller operations, meaning more trucks can be loaded to capacity; new methods, bigger trucks, better equipment handling, etc., and liberalization of state limitations on truck weight, size and speed, a result of better highways.

The possibility of future business recessions holds less threat to truckdrivers than to workers in many other occupations. During such times merchants tend to depend on smaller inventories and the frequent restocking which the flexibility of trucking makes possible.

**FIELDS OF EMPLOYMENT** - Private carriers such as chain food stores or manufacturing plants. For-hire carriers--either common carriers such as trucking companies serving the general public, or contract carriers hauling goods under contract to certain companies.

**AREAS OF EMPLOYMENT** - Nation-wide.

**REMUNERATION** - Most experienced truckdrivers in Ohio average between $150-$200 weekly, based on a 60 hour week with no overtime pay. Minimum hourly rates under current Teamster Union contracts--$2.78 while driving and $2.66 while waiting (breakdown, loading, unloading, pickup, drop time, etc.) Hourly pay scales are not always used. Some salaries are based on mileage, agreed-hours-running-time, and various other factors.

**METHOD OF ENTRY** - Driver-training courses offered in high school, or by professional driving schools may be helpful.(Professional driving schools offering truckdriving training should be checked with local trucking associations or The American Trucking Association in order to determine the training's acceptability by trucking companies.) High school courses in automotive mechanics may be helpful.

Preliminary experience may be gained by driving light, local trucks. Inter-city bus and local truckdriving are a highly desirable combination.

Another method of entry is to work up from a lower level job to driving. An example--starting as a freight handler, freight checker, or mobile lift operator. Next, worker learns how to operate a "switch engine", a cut-down tractor used for shifting trailers around in the terminal area. This provides valuable backing experience. The worker would next be advanced to city truck driving, and then to "peddle" routes--pickup and delivery runs within a 25-75 mile area. Finally, would be graduated to over-the-road driving, gaining a larger share of runs as he builds seniority.

**REQUIREMENTS OF ENTRY** - P.U.C.O. and Interstate Commerce Commission minimum qualifications include: 21 years old, able-bodied (no physical limitations), good hearing, 20/40 vision with or without glasses, read and speak English, 1 year's driving experience (automobile accepted), accident-free driving record. A thorough knowledge of the rules of the road and types of hazards which may be encountered are vital.

Most States, including Ohio, require a chauffeur's license.

Fleet operator standards frequently exceed I.C.C. minimums. Selection methods vary. May include formal tests and training programs, personal interviews and break-in periods with experienced drivers. Annual physical exams are a P.U.C.O. requirement. Written and other tests may be given on traffic knowledge, reaction time, vision acuity and field of vision, ability to judge speed, and emotional stability. The last step is the road test, with the applicant operating a vehicle of the type and size he will drive in regular service, under a variety of driving conditions.

Brief indoctrination may be given to applicant to acquaint him with the kinds of forms he must fill out.

**WORKING CONDITIONS** - May be required to spend much time away from home. However, in many cases, these periods may be only 2-3 days. Moving van drivers are apt to be away from home for the longest periods of time.Comparatively safe occupation because intensive safety programs and driving skill keep accident rates low. Physical effort involved is not great, but fatigue from sitting in one place for hours at a time and the nervous strain of sustained driving at night are considerable.

**Unions** - Most drivers are members of the International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Independent). If driving for a private carrier, may belong to a plant union.

**AVENUES OF PROMOTION** - Limited. A few advance to jobs as safety supervisors, driver supervisors, or dispatchers.

**ADDITIONAL INFORMATION** - Local trucking companies and trucking associations, local companies using trucks; American Trucking Association, Inc., 1424 Sixteenth St. N.W., Washington 6, D.C.; local unions, Ohio State Employment Service local offices.

**NOTES** - (Local opportunities, wages, etc.)

BUREAU OF EMPLOYMENT SERVICES
STATE OF OHIO

EMPLOYMENT INFORMATION SERIES

Revised: October, 1960

TRUCK DRIVER, LOCAL
TRUCK DRIVER, HEAVY
905.883-022
TRUCK DRIVER, LIGHT
906.883-026

### NATURE OF THE WORK:

Drives trucks carrying food, clothing, and other products from terminals, warehouses, and factories to wholesalers, retailers, and consumers.

When reporting to work at terminal or warehouse, receives assignments to make deliveries, pickups, or both. Also receives delivery forms and checks condition of truck. Platform men generally load truck. If does loading himself, and if many deliveries are scheduled, arranges items in proper sequence so that there will be a minimum of handling. At pick-up or delivery point, generally loads and unloads the merchandise himself. May have a helper to assist if carrying heavy loads such as machinery, or if deliveries are numerous. Moving van drivers generally have a crew of helpers to assist in loading or unloading household or office furniture.

At delivery points has individuals sign receipts and freight bills, and sometimes collects money for freight, C.O.D., deliveries, and other charges. At end of day turns in all receipts and cash collected, and records his time and the deliveries made. Also reports whatever maintenance or repair is needed before his truck is used again.

Some workers drive special types of trucks - dump or oil, which may require the operation of mechanical levers, pedals, or other equipment.

### OPPORTUNITIES FOR EMPLOYMENT:

Current - Nationally, a moderate rise in employment is anticipated.
Trends - Employment gains may not be made in direct proportion to freight volume because larger deliveries to fewer customers, resulting from the growth of chain stores and shopping centers, are becoming more frequent.

### FIELDS OF EMPLOYMENT:

Businesses distributing their own products and materials - department stores, meat packers, and other processors, wholesale distributors, petroleum companies, grocery chains, and construction companies. Also, for-hire operators serving the general public or specific companies under contract. The Federal Government and municipalities also employ local truck drivers. A large number are in business for themselves.

### AREAS OF EMPLOYMENT:

Mostly in and around large metropolitan areas.

## REMUNERATION:

Including the latest cost-of-living increase which went into effect August 1, 1960, all city drivers belonging to the Teamsters Union in a 13-state midwestern area including Ohio, earn $2.82 per hour with a 6-hour daily guarantee, time and one half after 8 hours daily and 40 hours weekly work. In some non-trucking industires, such as warehousing, there are lower scales provided for in the union contract.

## ENTRY METHODS AND REQUIREMENTS:

Qualifications vary considerably, depending on the type of equipment to be operated and the nature of the employer's business. Generally, applicants must be 21 years of age or older and must be able to meet I.C.C. and P.U.C.O. requirements, including annual physical examination. Some employers prefer applicants who have completed grade school, 2-4 years of high school or are high school graduates. Must be physically able to lift heavy objects and otherwise be in good health. Should have good hearing and vision (with or without glasses). Since a driver often deals directly with public, employers look for men who are tactful and courteous.

Applicant must have a current chauffeur's license, which is a commercial driving permit; an accident-free record is preferred, operating a motor vehicle while intoxicated, speeding, reckless operation, etc., are sufficient cause for rejection. Familiarity with traffic laws and safety measures is necessary, and some previous experience driving a truck is helpful. A young man may gain such experience by working as a truck-driver's helper. Or he may start in a lower level job such as freight handler, freight checker, or mobile lift operator. Employers also give consideration to experience gained in the Armed Forces.

Must be cautious, alert, and able to judge distances to coordinate his reactions. Driving ability is tested and written examination may be given. Training is often informal and may consist only of riding with and obseving an experienced driver on the job. If he is to drive a special type of truck, the new driver may be given additional training. In some companies, is given a brief indoctrination course which lasts 1 to 2 days covering general duties, efficient operation and loading of truck, company policies, and the preparation of delivery forms and company records.

May start as extra driver, taking over routes of regular drivers who are ill or on vacation, or making extra trips. Receives regular assignments when openings occur.

## AVENUES OF PROMOTION:

A few get jobs as dispatchers or advance to jobs as terminal managers or supervisors. Advancement generally consist of earning higher hourly wages by driving heavy or special type trucks instead of light trucks, or by transferring to over-the-road truck driving. Experienced truck drivers with business ability and ambition can start their own trucking company when they have sufficient capital to purchase expensive trucking equipment.

## WORKING CONDITIONS:

Night or early-morning hauling is sometimes necessary, but daytime work is more customary. Some drivers are assigned different routes when they report to work each day. When uniforms are required,the cost is usually paid for entirely or partly by the employer, who may also provide for their upkeep. Drivers are subject to nervous strain from city traffic and run the risk of back trouble and hernias.

## WORKING CONDITIONS (CON'T):

Unions - A majority belong to unions, mostly to the International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Independent). Some truck drivers employed by private carriers are members of unions representing the plant workers of their employers.

## ADDITIONAL INFORMATION:

Local Trucking Companies
Concerns Operating Trucks in Connection with their Business
Ohio State Employment Service Local Offices
International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America Local Unions

## NOTES:

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145 South Front Street
Columbus, Ohio 43215

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed
by the
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Ohio State Employment Service**

**TYPIST**
**203.588-018**

Sept.
1962

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Uses typewriter to make copies of letters and reports, fill out forms, make out bills, cut stencils, and prepare copy for printing. Also includes miscellaneous clerical tasks such as answering telephone, operating switchboard, acting as receptionist, sorting and distributing incoming mail, filing, checking information on reports and forms, and operating simple office machines. The various categories of typists are: Clerk-Typist, performs general clerical work and uses typewriter between 25% and 50% of the time; Technical Typist, works in specialized field, typing statistical or technical material, will use typewriter over 50% of the time; Transcribing-Machine Operator, uses typewriter in transcribing dictation reproduced on tape, wire or recording machine; Specialty Typist, uses a special kind of typewriter such as Varitype or Teletype machine.

OPPORTUNITIES

Current - There has been a consistant and substantial shortage of well-qualified typists in the State of Ohio in recent years. Many openings are available for workers with typing skill.

Trends - There is a constant need for typists. High replacement needs as well as openings and opportunities created by the expansion of business and governmental activities will make many jobs available to well-qualified entry workers for the next few years.

For Men - Typing jobs are available primarily to women, but opportunities exist for men in the iron and steel industry, railroads, and industrial plants and offices staffed by men.

FIELDS OF EMPLOYMENT - Federal, state, county, and municipal governmental agencies. Industrial, sales, and commercial establishments. Professional offices, educational institutions, trade and labor organizations, utilities, financial institutions, hotels, hospitals, and churches.

REMUNERATION - The salary is influenced by the size and nature of the business establishment, skills and knowledges required, and the size of the community. The beginning salary for typists in Ohio ranges from $200 to $250 per month. An experienced typist's average salary range is $300 to $350 per month. The starting salary for typists under state civil service classification is $210 to $288 per month. The federal civil service typist starts at $3,500 to $3,760 per year. Most typists are employed in establishments that provide extra benefits for their employees. These benefits may include life insurance, retirement, paid vacations, hospitalization, and medical and surgical insurance.

METHODS AND REQUIREMENTS FOR ENTRY

Training - Most employers require high school graduation and satisfactory completion of a typing course in high school or business college. The applicant must be able to type at least 40 net words per minute. A general understanding of office machine operation and a knowledge of filing practice is also required. For technical and specialty typing work, specialized training in a business or manufacturer's school is essential.

Selection Factors - Personal qualifications should include an attractive personal appearance, pleasant personality and ability to meet and work with people, memory for details, initiative, dependability and efficient work habits. Adaptability, keenness of vision, emotional stability, and ability to concentrate amidst distraction. Physical requirements should include normal vision and hearing, eye-hand coordination, and good health. Preference is given to applicants between the ages of 18 and 35, although older, experienced workers are acceptable.

WORKING CONDITIONS - Inside; clean, well lighted and ventilated surroundings. Regular hours and year-round employment. Subject to eye strain and minor injuries such as paper cuts and scratches from wooden desks. Sometimes expected to work rapidly for long periods of time.

AVENUES OF PROMOTION - Most workers start in this occupation as a file clerk, typist, or clerk-typist. Workers may be promoted from general typist to technical typist, varitypist, teletype operator, stenographer or secretary depending upon the acquisition of additional skills. Promotion in private industry is bases upon training, work experience, knowledge of the job, supervisory ability and seniority. Advancement in government is usually by examination.

FOR ADDITIONAL INFORMATION - Contact: The Ohio State Employment Service in your community; U.S. Civil Service Commission, Post Office and Courthouse Building, Cincinnati, Ohio; Ohio Department of State Personnel, Ohio Departments Building, Columbus 15, Ohio; local Business Colleges; the National Association and Council of Business Schools, Washington 9, D. C.
Read: Employment Opportunities for Women as Secretaries, Stenographers, Typists and as Office Machine Operators and Cashiers (Women's Bureau Bulletin 263, 1957), Superintendent of Documents, Washington 25, D. C. Price 20¢

# Employment Information Series

Written
May - 1966

VOCATIONAL COUNSELOR
045.108 (0-39.84)

NATURE OF THE WORK Employing a variety of guidance principles and techniques, the vocational counselor specializes in counseling individuals who have difficulties that are in some way occupationally related. Generally speaking, he assists counselees to: (1) realistically examine their employment "assets" and "liabilities"; (2) formulate a reasonable vocational goal that will bring personal satisfaction; and (3) develop practicable plans to achieve this goal. The counselor's services may be required by a variety of people, such as disadvantaged youths, handicapped veterans, and elderly workers whose jobs have been automated.

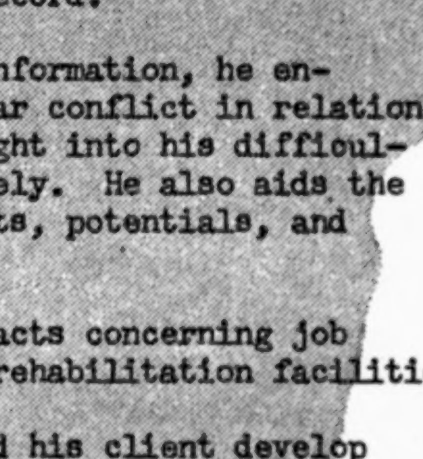
To adequately service any individual requires an initial interview and possible subsequent interviews. The counselor initiates a case, however, by talking with a person to obtain an account of his training, work experience, interests, work attitudes, and personal traits. During or after the interview, the counselor records such statements as given by the counselee, plus his own personal observations. Additional data on the person's general intelligence, aptitudes and abilities, physical capacities, knowledge, skills, interests, and values may be secured from various tests and inventories which are administered either by the counselor or a specialist in testing. Moreover, the counselor may contact other sources—schools, parole officers, medical clinics, or past employers—for special facts concerning his counselee's capacities or employment record.

In the process of identifying and gathering all this information, he encourages his counselee to analyze and evaluate his particular conflict in relationship to these individual factors; he helps him to gain insight into his difficulties so that he can look at them realistically and objectively. He also aids the counselee in recognizing and evaluating his employment assets, potentials, and preferences and relating them to the world of work.

The counselor provides the individual with pertinent facts concerning job requirements, occupational opportunities, and training and rehabilitation facilities.

Weighing all of this vocational data, the counselor and his client develop a flexible career goal. Various plans working toward this goal are subsequently put into action. In many cases, the counselor may suggest possible employment sources, or he may contact a prospective employer or training agency in behalf of his counselee. At a later date, he follows up on cases to determine whether satisfactory progress is being made toward vocational adjustment.

The vocational counselor's secondary duties include: keeping abreast of labor market information, occupational information, and labor laws and regulations; maintaining records and reports on each counselled applicant; establishing cooperative relationships with various community training, rehabilitation, and social agencies in order to gain their support in assisting counselees; and speaking to interested public groups on vocational counseling services.



## OPPORTUNITIES

Current In 1962 there were approximately 3,500 vocational counselors (some of whom worked as counselors only part-time) employed in the United States. It is estimated that the shortage of personnel is from 10 percent to 30 percent of need. National turnover has been estimated at 10 percent annually.

Trends The demand for well-qualified vocational counselors is expected to be strong for some time to come. This is due to several factors: the increasingly large numbers of workers entering the labor force each year; the multiplication of occupational problems created by automation and complex social pressures; and new federal legislation, such as the Manpower Development and Training Act and the "Anti-Poverty" programs, which provide for counseling services to people who must become or remain employable.

In addition to counselors needed because of such expansions in the field, new personnel are sought each year to replace those who retire, die, or leave the profession for other reasons.

The best opportunities in future years will be for those who have obtained a master's degree or doctorate degree.

Women About half of all vocational counselors in the United States are women. There are no discriminations or limitations on women in this field. They also have equal opportunities for advancement.

FIELDS OF EMPLOYMENT The great majority of vocational counselors are employed in state employment service offices. The next largest group works for various private or community agencies offering vocational guidance services. In addition, some work in institutions such as prisons, mental hospitals, and training schools for delinquent youths. The federal government hires a limited number of vocational counselors, chiefly in the Bureau of Indian Affairs and the Veterans Administration. Some individuals are engaged in research or graduate teaching in the field of vocational guidance.

AREAS OF EMPLOYMENT There are approximately 250 counselors in the local offices and youth opportunity offices of the Ohio State Employment Service; about 55 percent of these are women. The greatest concentrations of personnel are in the youth opportunity offices of Cleveland, Cincinnati, Columbus, and Dayton.

There are 37 vocational counselors employed by other approved agencies in Ohio (according to a survey done by The American Board on Counseling Services).

REMUNERATION The current entrance salary in the Ohio State Employment Service is $460 a month with in-grade increases to $550. In early 1963, inexperienced counselors in federal agencies generally started at $5,540 a year; experienced counselors were hired at salaries ranging between $6,675 and $8,045, depending on their qualifications. Annual starting wages with private counseling bureaus range between $5,500 and $6,000; experienced individuals receive upwards from $8,500. Those who hold a Ph.D. degree begin upwards from $9,000 with private organizations.

Usual benefits include two weeks' vacation after a year of service, sick leave, pension plans, and life and medical insurance coverage. Depending on available funds, some agencies also subsidize graduate work.

## REQUIREMENTS FOR ENTRY

Selection Factors above-average intelligence, emotional maturity and stability, desire to help people, adaptability, patience, ability to establish rapport with and obtain the confidence of various personality types, freedom from any personal prejudices, ability to express oneself easily and effectively

High School Education The high school curriculum should be a general college preparatory one with an emphasis on social studies.

Part-time or summer jobs that are of value to the student who is interested in this field include: voluntary hospital work as a candy-striper, camp counselor, and recreational leader at parks or recreation centers.

College Education The minimum requirement for employment in the Ohio State Employment Service is a bachelor's degree, with at least fifteen semester hours in the area of vocational guidance or a closely related field, plus one year's experience in guidance, counseling, or related work (a master's degree may be substituted for this experience).

Private and community agencies require at least a bachelor's degree in vocational counseling or in a related field, such as psychology, personnel administration, education, or public administration. Strong preference is given to those who have a master's degree; for those lacking graduate training, employers emphasize field experience.

The basic undergraduate foundation is thus in psychology with some emphasis on sociology. At the graduate level, requirements usually include courses, such as techniques of appraisal and counseling for vocational adjustment, group guidance methods, counseling follow-up techniques, psychological tests in vocational counseling, educational psychology, research methods and statistics, psychology of occupations, industrial psychology, and job analysis and theories of occupational choice.

In the public employment service of each state, in-service training programs are provided for new counseling trainees.

SCHOLARSHIPS The American Psychological Association annually publishes an article on "Educational Facilities and Financial Assistance for Graduate Students in Psychology." This article describes the institutional facilities, programs, and stipends offered by universities in the United States and Canada. A reprint may be obtained by writing to the Association.

WORKING CONDITIONS Vocational counselors normally work eight hours a day, forty hours a week. Overtime occasionally may be involved when the counselor participates in civic or educational programs or some similar functions.

This is office work, usually performed in neat, well-lighted, and comfortable surroundings which are often air-conditioned. In some of the larger agencies private cubicles are furnished. The counselor sits at a desk most of the time and does a great deal of listening and talking. He may use tape recorders and slide and film projectors.

PROMOTION POSSIBILITIES In the state employment service, a counselor serves a

120-day civil service probationary period; upon its completion, he is certified. After considerable experience, promotions may be made to supervisor of counseling services within the local office; to area counselor of several local offices; to central office supervisor of statewide services. The line of advancement in other agencies is similar.

Those with doctorate degrees may obtain consultative appointments or teaching appointments as professors in the guidance field.

PLACEMENT SERVICES To enter the public employment service, apply to the state department of personnel, the personnel department of the state employment service, or the local professional placement unit of the public employment service. Openings are filled through civil service tests.

To secure a position in a private or community agency, contact the personnel offices of such agencies or a commercial placement firm. For information on federal openings, contact the U.S. Civil Service Commission, Washington, D.C. 20415.

SOURCES OF ADDITIONAL INFORMATION American Psychological Association, 1333 Sixteenth Street, N.W., Washington 6, D.C.; American Personnel and Guidance Association, 1605 New Hampshire Avenue, N.W., Washington 9, D.C.; Career Information Service, New York Life Insurance Company, Box 51, Madison Square Station, New York, New York 10010; U.S. Department of Health, Education, and Welfare, Office of Education, Guidance, and Counseling Programs Branch, Washington, D.C. 20202; The American Board on Counseling Services, 1605 New Hampshire Avenue, N.W., Washington 9, D.C.

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service
Bureau of Unemployment Compensation

# EMPLOYMENT INFORMATION SERIES

Prepared and distributed
by the
Counseling Section
Ohio State Employment Service

## VOCATIONAL REHABILITATION COUNSELOR

045.108-010

Revised
January
1964

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Assists physically and mentally handicapped persons by providing vocational rehabilitation casework to bring about successful employment. Will plan and arrange the following services for clients where necessary: physical and mental examinations; physical restoration including, surgery, hospitalization, braces, etc.; prosthetic devices (the addition of an artificial part to the human body) essential for obtaining or retaining employment. Will provide vocational counseling, and planning; vocational training and evaluation; when needed, arranges for maintenance and transportation during rehabilitation; occupational equipment, books and supplies, licenses, etc.; placement and follow-up. May work with veterans, who come under the regulations of Public Law 16, in preparing a program of vocational training. May do special placement work with the severely disabled, such as the blind. May contact employers to make arrangements for placement, to survey and evaluate potential jobs for the handicapped, and do job development and public relations work.

OPPORTUNITIES -

Current - The need for well trained and capable counselors exceeds the number of available personnel in both government and private agencies. Governmental agencies currently average approximately ten vacancies a year; in addition, to filling the need for newly created positions.

Trends - It is anticipated that the need for qualified applicants will continue. Expansion in Ohio agencies may begin some time during the mid 60's. More and more private agencies will seek experienced "rehabilitation consultants".

For Women - Equal opportunities usually exist for both men and women, although, men tend to be more in demand for line and supervisory positions.

FIELDS AND AREAS OF EMPLOYMENT - Vocational rehabilitation counselors are employed by the Bureau of Vocational Rehabilitation, Division of Services for the Blind, Division of Mental Hygiene(some state hospitals) and the Veterans' Administration. Private agencies employing counselors include: health and welfare agencies; local and national tuberculosis, heart, crippled children, and blind associations; rehabilitation centers and sheltered work-shops; certain religious groups, councils of social agencies; industrial personnel services; and insurance companies.

REMUNERATION - The starting salary for counselors employed by private agencies ranges from $6000 to $7200 a year. The entry wage for those in governmental agencies ranges from $5040 to $7200 a year, district supervisors usually start around $6600 a year. With five years of experience the counselors receive any place from $6000 to $8500 a year.

REQUIREMENTS FOR ENTRY -

General - An interest in people, adaptability (to unusual physical appearances or mental conditions), maturity of judgment, emotional stability, initiative, resourcefulness, perseverance, and skill in written and oral communication. Ability to meet and tactfulness in dealing with people and their problems, capable of accepting supervision, possess the ability to work independently, good health, and an appearance which inspires confidence. Should have a knowledge of vocations, employment opportunities, and educational and welfare facilities available in the state and on the local levels.

Education, Training and Experience - Graduation from an accredited college or university with a Bachelor's or Master's degree. Courses in vocational guidance, personnel or industrial management, educational administration and supervision, vocational education, social work or psychology are essential. A Master's degree in rehabilitation is desirable. There are thirty five schools in the United States offering special rehabilitation curricula in their graduate schools. Kent State University is the only institution in Ohio offering this program of study. The minimum requirement for entrance into a state agency is one year's experience in vocational rehabilitation or a closely related field with specialized work in dealing with the handicapped. A graduate degree may be substituted for a portion of the required work experience.

Examination - Vocational rehabilitation counselors employed by governmental agencies must qualify for appointment through civil service examinations.

VENUES OF PROMOTION - Appointment to vocational rehabilitation counselor from the civil service list. May advance to supervisor or transfer to an area of specialization. Specific information can be obtained from the individual agencies. Advancement depends upon the amount of education and training, experience, and supervisory ability.

DDITIONAL INFORMATION - Write or contact:. **Federal-State Civil Service Commissions,** Veterans' Administration; Bureau of Vocational Rehabilitation; Division of Services for the Blind; University Placement Offices (Schools of Social Work); Councils of Social Agencies; national and state voluntary organizations in health and welfare fields; National Rehabilitation Associations, Washington, D.C.; Vocational Rehabilitation Administration, Department of Health, Education and Welfare, Washington 25, D.C.

# EMPLOYMENT INFORMATION SERIES

**Prepared and distributed
by the
Counseling Section
Ohio State Employment Service**

## WAITER or WAITRESS

311.878
all suffixes

Revised
October
1963

## OCCUPATIONAL RELEASE

NATURE OF THE WORK - Greets customer(s), supplies a menu(s) and drinking water, takes the order, relays the order to the kitchen, serves the meal in proper sequence (appetizer to dessert and beverage), and presents the customer with his check. May collect the money for payment of bill and bring the change. Watches assigned station and renders additional services as required. May assist patrons in food selection by making suggestions or answering questions concerning the dishes on the menu. The majority of these workers are required to clear tables or counters, carry soiled dishes to the kitchen; fill sugar, salt, pepper containers; clean equipment and make coffee. May wash some of the dishes or glassware at sinks behind the counter; prepare sandwiches, salads and mix fountain drinks; fill napkin containers; mark and cut pies and cakes; and perform other duties as required. May prepare areas for guests by putting out fresh linens, silverware, and glassware where necessary. Usually works under the supervision of a hostess or head waiter in large restaurants or hotels. Will work under the supervision of the owner, manager, or cook in smaller establishments.

OPPORTUNITIES

Current - There are over half a million workers employed in this occupation. Business is usually good the year round and competent employees are always in demand. Most opening positions occur as a result of turnover in jobs that are seasonal, are inconveniently located, or offer little opportunity for tips. Competition for waiter and waitress positions in higher priced restaurants is great because the turnover is relatively low.

Trends - It is anticipated that employment in this occupation is expected to increase with the continued growth of population, tourism, and the growing teddency of people to eat out more often. A large number of temporary jobs become available each summer in resort areas.

FIELDS AND AREAS OF EMPLOYMENT - Food establishments are located in cities and towns of all sizes, along highways, and in resort sections of Ohio. The largest percentage of these workers are employed by restaurants (dining room or drive-in), luncheonettes, cafes, cafeterias, coffee shops, night clubs, and cocktail bars. The next largest group work for restaurant owners in hotels and resort areas. Others may be employed by schools, drugstores, variety store fountains, industrial cafeterias, catering firms, and railroads.

REMUNERATION - Individuals in smaller establishments earn between 65 and 85 cents per hour, plus one or two meals a day. Waiters or waitresses in larger restaurants and dining rooms receive salaries ranging between 65¢ and $1.00 per hour. May earn as much as $1.25 per hour in some instances. Wages will vary according to the geographical location. Workers usually receive tips in addition to their regular salary. The frequency and value of tips varies considerably, depending upon the skill of the worker; the size, type, and location of the eating establishment; and the tipping habits of the community. Tipping occurs most frequently in more expensive restaurants, hotel dining rooms, cocktail bars, railroads, and drive-ins. Extra benefits may include participation in health insurance and retirement programs.

REQUIREMENTS FOR ENTRY

General - A genuine liking for people, enjoyment in serving food to customers, and an interest in food preparation. Should possess a pleasant personality; a neat, clean personal appearance; tact in dealing with people; and an even temperament. Efficient work habits, good English, and a knowledge of basic arithmetic are also important in this occupation.

Education - All establishments will accept non-graduates. No particular level of education is required for employment in this occupation; however, employers hiring inexperienced workers prefer people with at least two or three years of high school education. Special courses given by vocational schools, restaurant associations, etc., are considered good preparation for entrance into this work.

Training and Experience - Small, informal eating establishments will accept inexperienced workers and give them on-the-job training; however, they prefer to hire people with a nimimum of from one to two month's experience. May begin as a bus boy or bus girl and learn the duties of waiter or waitress through observation and on-the-job instruction. Larger restaurants and hotels prefer personnel with at least three and usually six to eight month's experience.

Physical - Good health. Weight may be an important factor as space between tables and behind counters is often limited. State food service law requires a periodic chest X-ray. Local boards of health may have other regulations in addition to this minimum state requirement.

WORKING CONDITIONS - Usually works a 40 to 48 hour week. The hours may be irregular in some establishments. Requires considerable walking, lifting, carrying, some reaching and bending. May work indoors or out-of-doors. Usually furnishes own uniforms. May be subject to burns from hot food and cuts from sharp utensils.

AVENUES OF PROMOTION - Begins as bus boy or girl, waiter, waitress, carhop, counter girl or soda fountain worker. May progress to one of the following positions: dining room supervisor, head waitress, head waiter, counter supervisor, hostess, catering manager, or maitre d'hotel. May transfer to jobs in better paying restaurants.

SOURCES FOR ADDITIONAL INFORMATION - Write or contact: Educational Director, National Restaurant Association, 1530 North Lake Shore Drive, Chicago 10, Illinois; Hotel and Restaurant Employees and Bartenders International Union, 525 Walnut St., Cincinnati 2, Ohio; managers of local hotels, restaurants, drug stores, etc.; and the local Ohio State Employment Service.